

# CBSG News

## Inside...

- Reports, Results, and Resolutions from the 1996 CBSG Annual Meeting
- CBSG Regional Networks

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## 1996 CBSG Annual Meeting Reports, Results, and Resolutions

1996 was another exciting and successful year, rounded out by the CBSG annual meeting in Denver, Colorado from 23-25 August. The meeting was very productive, with a slightly different format from previous years. This year, presentations were kept to a minimum, with more emphasis on working groups organized around special, high interest themes. The meeting began with pre-selected working group leaders presenting information on their working group topics so that participants could choose to work in the group most closely suited to their interest and expertise. Topics included invertebrates; confiscated animals; behavioral assessment and management; a re-examination of the Global Animal Survival Plan (GASP) process; and others. Additional working group topics followed on from discussions at the CBSG Futures Search 2 workshop, including: techniques to enhance involvement of local people in CBSG processes; the CBSG scientific advisory network; and regional CBSG nodes/networks. Each of these working groups not only developed recommendations for action, but developed concrete action steps with particular individuals responsible for implementation and follow-up. This issue of *CBSG News* contains those working group reports as well as regional zoo association reports. Finally, an important and rewarding plenary session included an overview of the advantages for zoos in funding CBSG workshops, followed by a number of individual presentations detailing relevance of CBSG processes to the presenter's institution as well as the personal relevance to zoo staff who attended.

1997 promises to be another active and innovative year for CBSG. We begin 1997 with a PHVA in Uganda for chimpanzees, followed by a PHVA for the eastern saurus crane in Thailand, our ongoing series of workshops on the Edward's Aquifer in Texas in collaboration with the US Fish and Wildlife Service, and several other special interest meetings. We hope to incorporate participatory rural assessment into several of our PHVA processes later this year, in an effort to enhance our ability to use the knowledge of local people to develop holistic conservation strategies for endangered species. These, and other tools, will continue to be tested and involve as we try to expand the scope of our processes.

This year's annual meeting will be held in Berlin, Germany from 14-17 August, hosted by the Berlin Zoo and Tierpark Berlin-Friedrichsfelde. We will continue to use the new, more topic-focused format for this year's meeting. If you would like to convene a working group on a particular topic of interest, please let us know. We hope to see you in Berlin!



Newsletter of the  
Conservation Breeding  
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World Conservation Union

Ulysses S. Seal, CBSG Chairman

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## CBSG News

The CBSG news is published by the Conservation Breeding Specialist Group, Species Survival Commission, World Conservation Union. CBSG News is intended to inform CBSG members and other individuals and organizations concerned with the conservation of plants and animals of the activities of the CBSG in particular and the conservation community in general. We are interested in exchanging newsletters and receiving notices of your meetings. Contributions of \$25 (U.S.) to help defray the cost of publication would be most appreciated. Please send contributions or news items to:

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## CBSG Mission Statement

The mission of the Conservation Breeding Specialist Group is the conservation or establishment of viable populations of threatened species.

The goals of the CBSG are to:

1. Organize a global network of people and resources.
2. Collect, analyze and distribute information.
3. Develop global conservation breeding programs.
4. Integrate management programs for captive and wild populations.



## Australasia Regional Report

### Constitutional Changes to the Association

The membership of the Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) has accepted significant changes to the Association's constitution this year. The ARAZPA is now administered by a Board of Management with committees addressing the region's species management program (ASMP), ethics, budget review, and animal husbandry.

### ARAZPA Board of Management

At the Association's annual conference held at Healesville Sanctuary in April, the ARAZPA Board of Management was restructured and Board members were appointed for the 1996-97 year. Ed McAlister, CEO of the Royal Zoological Society of South Australia, was elected as President, replacing Gaye Hamilton who has served four productive years in that capacity. Chris Banks, Zoological Board of Victoria, and Tony Billing, Napier Wildlife Experience, New Zealand, retained their positions as Vice-president (Australia) and Vice-president (New Zealand). Frank Bonaccorso, Chief Curator, National Museum and Art Gallery, PNG, was elected to the newly-created position of Vice-president (Papua New Guinea). Ian Denney, Western Plains Zoo, New South Wales, will also serve on the Board as ASMP Committee Chair, as will Rob McKinlay, Currumbin Sanctuary, Queensland, William Meikle, Taronga Zoo, New South Wales, and Lee Moyes, Territory Wildlife Park, Northern Territory.

### Increased Institutional Membership

The institutional membership of the Association has increased significantly since 1995 from 36 to 42 full institutional members. All institutional members are now covered by the Association's species management program. The number of individual members has increased from 95 to 112. A membership drive will commence in September.

### Institutional Membership in Papua New Guinea

Three institutions from Papua New Guinea joined the association during 1995/96: The National Museum (Port Moresby), The Botanical Gardens (Port Moresby), and The Rainforest Habitat (Ley). These are the first institutional members of the association from Papua New Guinea, an important step for ARAZPA if the association is to properly respond to the conservation challenges of all of the Australasian region.

### Taxon Advisory Groups

Ilaiah Bigale, of the National Museum in Port Moresby, is currently working to establish a Papua New Guinea Fauna Taxon Advisory Group to develop regional priorities for Papua New Guinea taxa. An initial aim of the PNG Fauna TAG will be to work with the Department of Environment and Conservation to establish a formal review of the conservation status and needs of Papua New Guinea Tree Kangaroo taxa.

### Captive Management Plans

Captive Management Plans were established for five additional taxa. Several ARAZPA institutions are currently involved with the coordinated management of 44 priority taxa in Captive Management Plans; 23 of these taxa are managed as part of a national Recovery Program, either in Australia or New Guinea.

Programs embracing nine taxa involve current reintroductions of captive-bred stock, with an additional seven taxa being managed for reintroduction within the life of the program. Two programs involve a "headstart" or rescue component, and captive populations of five taxa are managed primarily for Recovery Program-oriented research, such as research into methodologies to assist with *in situ* management or to elucidate basic biological parameters required to monitor and model the wild population.

### Studbooks

Fifty regional and international studbooks are currently maintained in the region. With the assistance of the Records Officer's Specialist Group, a formal process of studbook data review has been established and review of all ARAZPA studbooks is currently in progress. This process has resulted in substantial benefits in terms of improved data quality.

The ARAZPA contributed all 50 registered studbooks to the first distribution of the ISIS studbook register in CD ROM.

### ARAZPA Support for PHVAs in Australia

The ARAZPA's promotion of the CBSG Population and Habitat Viability Assessment (PHVA) process to Australian wildlife agencies has recently resulted in the staging of two workshops in Australia. The target species for the workshops, the Striped Legless Lizard (*Delma impar*) and the Spotted Tree Frog (*Litoria spenceri*), are threatened species occurring in New South Wales, Victoria and the Australian Capital Territory.

A third workshop is planned for the Tree Kangaroos of Papua New Guinea, to be held in mid-1997.

### Regional Animal Species Collection Plan

The development of REGASP v3.0 was completed during 1996 along with a REGASP user manual. The ISIS has now distributed REGASP disks and user manuals to its members. The REGASP was designed and produced by ARAZPA and has been in use in the major Australasian zoos for several years. The system will be significantly enhanced by the inclusion of data from zoos world-wide via the ISIS communication network.

### Partnership with the Australasian Society of Zoo Keeping

The Association is currently negotiating a partnership with the Australasian Society of Zoo Keeping (ASZK), an organization which shares many of the same goals and objectives as the ARAZPA. The partnership will see the membership of the two bodies combined creating a single industry voice in Australasia. Combining the resources and activities of the two organizations will eliminate duplication of effort and will strengthen communication throughout the region.

### World Wide Web Site

Information on ARAZPA can now be obtained on the World Wide Web. The ARAZPA web-site contains details on the Association's membership, programs, and position-holders. Users of the site can also access the bi-monthly ARAZPA Newsletter (<http://geology.anu.edu.au/zoo/arazsite.html>).

*This report was submitted by Mr. Jonathan Wilcken, ARAZPA.*

## Japanese Association of Zoological Gardens and Aquariums



The Japanese Association of Zoological Gardens and Aquariums (JAZGA) represents a total of 162 members consisting of 97 zoos and 65 aquariums in Japan as of 22 May 1996. One zoo and one local freshwater aquarium joined our organization this year.

The Species Survival Conference and the 8th Species Survival Commission Japan (SSCJ) Annual Meeting were held in Wakayama Prefecture, hosted by the Shirahama Adventure World on 7-8 November 1995. The 8th SSCJ decided to increase the number of taxon committees and to strengthen the breeding programs of endangered species. The 9th SSCJ Conference was held 12-13 November 1996, hosted by the Chiba Zoological Park in Chiba Prefecture.

Dr. U.S. Seal gave a special lecture on current activities of CBSG at the conference. We really understood the necessity to establish more intimate and cooperative relationships with other regional breeding programs of endangered species.

The General Meeting of JAZGA was held on 22-25 May, 1996, where a chairperson, two vice-chairpersons, and other board members were elected. Participants also decided to support the CBSG and IUDZG as host of their 1998 Annual Meeting in Yokohama.

We have distributed the Federation of Zoos' Response Document to "The Zoo Inquiry" by WSPA and the BFF translated into Japanese among our members. This is to theoretically fortify our zoos.

The 4th International Aquarium Congress in Tokyo was held from 23-27 June 1996 at the Tokyo International Exhibition Center. Organized by the Tokyo Metropolitan Government and Organizing Committee for the IAC and hosted by the Tokyo Sea Life Park, the Congress was attended by many persons affiliated with aquariums from 28 countries around the world. Many aquarium Directors of JAZGA supported the Organizing Committee.

The Japanese Government initiated a project for conservation of the native Thushima Wild Cat in captivity. There are probably about 100 Thushima Wild Cats left in the wild. One young individual is currently being held at the Fukuoka Zoo in

Fukuoka Prefecture, Kyushu. Another government project exists for the Japanese Crested Ibis with only one aged female currently held on Sado Island.

*This report was submitted by Dr. Masuru Saito, Ueno Zoological Garden, Tokyo, Japan.*

## SEAZA Regional Report

### 1995: ASEAN Year of the Environment

The year 1995 was designated as the Association of South-East Asia Nations (ASEAN) Year of the Environment. This was a step forward to coordinate efforts in the fields of: 1) conservation of natural habitats of flora and fauna and prevention and control of forest fires; 2) law enforcement against illegal traffic of protected species; 3) firmer actions against destructive methods of fishing along coastal waters and coral reefs; and 4) conservation of marine biodiversity. The ASEAN is comprised of Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

### Southeast Asia Workshop on Amphibians

The Southeast Asia Working Group held a workshop on Monitoring Amphibian Populations, 15-21 January 1995 at Poring Station, Kinabalu Park, Sabah, Malaysia. The goals of the workshop were to: 1) stimulate and encourage work on populations of amphibians in Southeast Asia by resident biologists; 2) discuss with those potential workers a set of standard procedures in order to facilitate comparison across future studies; 3) encourage communication among those workers; and 4) find a resident biologist to assume the chairmanship of the Southeast Asia Working Group.

### ASEANTA Award

The Night Safari in Singapore has won the 1995 ASEAN Tourism Association (ASEANTA) Award of Excellence for the Best New Tourist Attraction in ASEAN. The ASEANTA Award for Excellence in Tourism is the private sector's way of giving recognition to ASEAN organizations which have contributed to the development and promotion of the ASEAN tourism product. The criteria for this award included visitor attendance, aesthetic appeal and creativity in design, quality of tourism experience, and marketing and promotional efforts for the attraction.

### Fifth SEAZA Annual Conference

Hosted by the Taipei Zoo, the city of Taipei, and the Zoological Society of Taipei, the SEAZA Annual Conference (17-20 October 1995) was attended by 130 participants from 16 countries and territories, including Australia, Brunei Darussalam, Hong Kong, India, Indonesia, Japan, Malaysia, the Netherlands, the Philippines, South Africa, Taiwan, Thailand, United Kingdom, USA, and Vietnam. Also present were the leadership of

SEAZA...

IUDZG/WZO, CBSG, the Wildlife Information Network (WIN), ARAZPA, and the World Pheasant Association (WPA).

The Conference theme was, "SEAZA Missions for the 21st Century." The year 1995 was the 80th anniversary of the Taipei Zoo. Thirty-four scientific papers were presented, covering topics on: 1) conservation and reproductive biology; 2) new concepts for management, education and research related to *in-situ* and *ex-situ* conservation; and 3) cooperation among zoos in the Southeast Asia region.

The General Assembly agenda included the following items: 1) reports of the President, the Professional Standards Committee, and the Membership Committee; 2) update briefings by the IUDZG President and CBSG leadership; 3) report by the Director of Zoo Melaka in the next VIth SEAZA Annual Conference, to be held 22-26 October 1996, preceded by a workshop on Animal Management from 15-19 October 1996; and 4) the venue for the 1997 Conference was proposed to be the Philippines and the venue for the 1998 Conference proposed to be the Saigon Zoo, Ho Chi Minh City, Vietnam.

The Vth General Assembly declared Dr. U.S. Scal an honorary member of SEAZA, recognizing his valuable contribution to the advancement of SEAZA and congratulated Bernard Harrison for being the first person from SEAZA to be elected to the IUDZG Council. The Assembly thanked Mr. Willie Labuschagne representing the WZO leadership. As a matter of policy and tradition the IUDZG and CBSG will be invited to attend all SEAZA Annual Conferences in the future.

The SEAZA and the World Pheasant Association (WPA) signed a memorandum of understanding to cooperate in both *in-situ* and *ex-situ* measures to preserve biodiversity, particularly of galliform birds. The cooperation will include forming a Taxon Advisory Group (TAG) co-chaired by both associations, producing studbooks, conducting workshops and training sessions, and other relevant actions to improve conservation of the Galliformes.

An elegant farewell banquet was hosted by the Taipei Zoo. SEAZA Certificates of Attendance and Certificates of Appreciation were issued and a post-conference tour was arranged to Yangmingshan National Park and the National Museum.

On behalf of all participants, the President thanked the Sponsors and the Organizing Committee for facilitating the attendance of several colleagues and for the excellent arrangement for the successful Conference.

### Indonesian National Flora-Fauna Day

The Indonesian Zoological Parks Association (PKBSI) led the commemoration of the national Flora-Fauna Day, 5 November 1995. In commemorating this day, the PKBSI has been designated as Chair of the Central Committee to coordinate government agencies and non-governmental agencies (NGO) in related activities. In all 27 provincial regions, the governors chaired the regional commemoration committees.

The theme was "Enhancing the care for and conservation of national flora and fauna in conjunction with the golden anniver-

sary of the Republic of Indonesia." The program activities included: 1) a national campaign to continue the planting of one million trees as the "Re-greening of Indonesia;" 2) intensifying efforts in the conservation of provincial flagship species of flora and fauna (Presidential decree No. 4, 1993); 3) public education to promote conservation of the environment and care for its flora and fauna; 4) workshops, seminars and scientific sessions; 5) competitions amongst school children and the general public in paintings, poetry, and reading essays based on the national theme; and 5) other NGO activities in related fields.

### Global Biodiversity Conference

Under the aegis of the Global Biodiversity Strategy and the U.N. Convention on Biodiversity, two events were held in November 1995 in Jakarta: 1) the third meeting of the Global Biodiversity Forum (GBF3) on 4-5 November 1995; and 2) the second meeting of the Conference of the Parties to the Convention on Biological Diversity (COP II) on 6-17 November 1995 with its theme "Biodiversity for equitable welfare of all people."

At Sao Paolo, Brazil, we have recorded a joint CBSG-IUDZG resolution on the U.N. Convention on Biodiversity and on Climate Change.

#### *Marine Biodiversity*

At the COP I, governments agreed to take up marine biodiversity as the main theme and they recognized that marine species significantly differed from terrestrial species; in particular: 1) information and strategies concerning the conservation and sustainable use of marine biodiversity and biological resources; 2) unique problems of marine biodiversity conservation and proposed solutions; 3) protected area management and policy; 4) community-based coastal resources management; 5) needs and mechanisms for regional and international cooperation; 6) relationship of the Biodiversity Convention to other international marine treaties and programs; and 7) priorities for special action by the COP and its subsidiary bodies on marine biodiversity.

Considering the geographical disposition of the Southeast Asian region, marine biodiversity is of utmost importance for the welfare of the people.

#### *Regulating Access to Genetic Resources*

The Biodiversity Convention established that genetic resources lie within the sovereign jurisdiction of individual nations. Countries are now moving to establish legal regimes to regulate access to and utilization of their genetic resources which, due to rapid development of biotechnologies, are becoming increasingly valuable as raw materials for drugs, crops, and industrial material and processes.

Areas of discussion included: 1) national efforts to develop policies and laws regulating genetic resource access; 2) compensation for local communities within the national access regulation framework; 3) principles and mechanisms for benefit sharing; 4) the unique situation of indigenous people with respect to genetic resources exploitation in their territories; and 5) the need

for international mechanisms to harmonize and give effect to national access regimes.

#### *Decentralization of Governance and Biodiversity Conservation*

Many national governments are moving to decentralize their powers to provincial, state, or lower levels of government, or even giving some of their traditional responsibilities to the private sector. Questions discussed included: 1) what experience exists to date with decentralization of biodiversity management; 2) what steps need to be taken to ensure that increasing decentralization of governance helps rather than hurts biodiversity conservation; and 3) how can financing of biodiversity conservation flow directly to local level efforts and reflect local level priorities?

#### *Forests and Biodiversity*

Forests are a key repository for the earth's biodiversity as well as important resources for both local and national economies. Forest loss has been a topic of great concern, particularly in the species-rich tropical forests, for at least a decade or more. Better and more relevant research is necessary to provide answers to the intricate problems of sustainable forest management. There was no agreement at UNCED on a mechanism for promoting sustainability of the world's forests. A protocol under the Convention on Biological Diversity has been one proposed mechanism. Areas of discussion included: 1) can the Convention effectively address the myriad socio-economic and biophysical factors affecting the sustainability of forests; 2) what specific steps should be taken within the context of the Biodiversity Convention; and 3) what is the role of science in helping to develop a comprehensive mechanism to promote sustainable forest management?

Solutions to the above questions are to be addressed by the Global Biodiversity Forum (GBF3) and the second Conference of the Parties to the Convention on Biodiversity (COP II) will influence the future developments of Southeast Asia, being an archipelagic region with its species-rich tropical forests. Being part of the region, SEAZA has to face these realities.

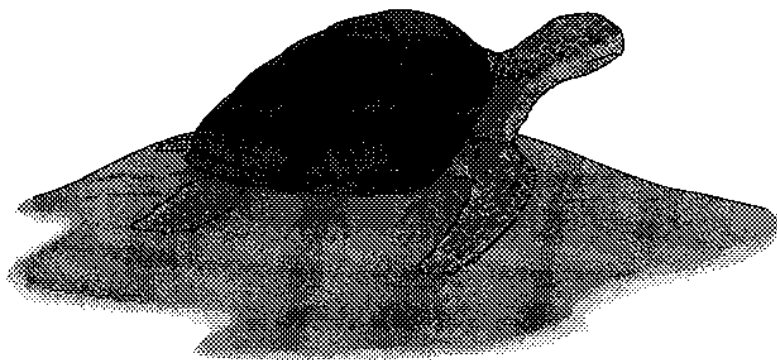
#### **Transfer of Duties to IZPA/PKBSI and PIHI**

During the national Congress of the Indonesian Zoological Parks Association (PKBSI/IZPA) and the Indonesian Awuarist Society (PIHI) in November 1995, new Boards of Executives for the term of office 1995-1998 were elected. The new General Chairman of PKBSI is Dr. Lukito Daryadi, and of PIHI is Sukiman Hendrokusumo. D. Ashari's present position is Chairman, Board of Advisers in both organizations, after having

served as General Chairman of PKBSI for the last twelve years and of PIHI for the last nineteen years.

#### **Komodo Monitor PHVA Workshop**

The Conservation Breeding Specialist Group (CBSG), Species Survival Commission (SSC) of IUCN, The World Conservation Union conducted a Population and Habitat Viability Assessment Workshop on Komodo monitor at Taman Safari Indonesia 4-7 December 1995. The first goal of the workshop was to present preliminary analysis of Komodo monitor distribution and status, habitat characteristics and status, threats to the remaining populations, and other related issues critical for developing long-term management strategies for wild populations. The second goal was to assess the status of captive management of Komodo monitors and to make recommendations designed to strengthen the coordinated management of captive and wild monitors in Indonesia and elsewhere. The workshop was attended by 40 participants from Indonesian Forest Protection and Nature Conservation, Indonesian Zoological Parks Association, University of Indonesia, Indonesian Institute for Sciences, NGOs, and representatives from IUCN/SSC Conservation Breeding Specialist Group.



#### **Marine Turtle PHVA**

The CBSG also conducted a Population and Habitat Viability Assessment Workshop on Indonesian populations of marine turtles at Taman Safari Indonesia, 11-14 December 1995. The primary goal of the workshop was to present data on the distribution and status of marine turtles in Indonesia, the nature and status of remaining coastal habitats supporting marine turtle populations, and other issues critical to the development of long-term management strategies that recognize the importance of multinational cooperation and direct participation.

#### **SEAZA Workshop on Animal Databases**

The Singapore Zoo on behalf of SEAZA held a workshop from 8-11 April 1996 on ARKS (Animal Record Keeping System), MEDARKS (Medical Animal Record Keeping System), and REGASP (Regional Animal Species Plan), a master database of animal stocks. Zoos using ARKS are able to keep up-to-date records of their animal collections. The workshop was arranged to teach 19 participants from 14 member zoos and wildlife parks in Southeast Asia.

#### **SEAZA Executive Board Meeting**

The meeting agenda included: 1) review of points in Communiqué No. 5 of the Fifth SEAZA Conference, held at the Taipei Zoo, Taiwan; 2) discussion on SEAZA membership

SEAZA...

status; 3) review of the bylaws of SEAZA; and 4) preparation for the Sixth SEAZA Annual Conference in Melaka, Malaysia, 22-25 October 1996.

The SEAZA and the World Pheasant Association (WPA) have signed a Memorandum of Understanding (MOU) to cooperate in both *in-situ* and *ex-situ* measures in preserving biodiversity, particularly of galliform birds. Recognizing that the SEA region has been and continues to be one of the most important sources of wildlife in zoos and aquariums around the world, the SEAZA considers it important that its members actively participate in international efforts such as taxon advisory groups (TAGs) and studbook keeping and to identify and inventory species in collections of member institutions.

Dr. Stephen Leatherwood, chairman of the Membership Committee, and Dr. Richard Tenaza, chairman of the Constitution and Bylaws Committee, will present reports on proposed amendments at the Sixth SEAZA Annual Conference.

The term of office of the present Executive Board will be terminated at the coming conference. Therefore EB nominations will be invited from the members. The EB agreed to nominate Bernard Harrison for the next term of SEAZA president.

The SEAZA was invited by the Organizing Committee of the Fourth International Aquarium Congress in Tokyo, on 23-27 June 1996 (IAC '96). The EB agreed to submit a draft resolution to save tropical marine biodiversity, including coral reefs, by condemning destructive methods of animal collection.

### Javan Hawk-Eagle Workshop

At the invitation of the Director General of Forest Protection and Nature Conservation (PHPA) and the Director of Conservation of Flora and Fauna (BKFF) and hosted by Taman Safari Indonesia (TSI), the workshop (6-8 May 1996) was a collaborative effort of the PHPA, TSI/PKBSI, and the CBSG/World Conservation Union (SSC/IUCN).

The Javan Hawk-Eagle, (*Spizaetus bartelsi*), designated the National Bird of Indonesia by Presidential Decree No. 4, 1993, is endemic to the island of Java and critically endangered. Historically, the population was widely distributed in the wet tropical forests of Java, but it has since declined to about 100 pairs of birds because of habitat loss from extensive deforestation on Java, sporadic hunting, and disturbance.

The workshop, attended by 44 biologists, managers, and decision-makers, reviewed data from wild and captive populations as a basis for assessing extinction risks, assessing different management scenarios, evaluating the effect of removal from the populations, examining possible strategies for reintroduction, and developing stochastic population simulation models.

The following conclusions/recommendations were made: 1) establish a Javan Hawk-Eagle Foundation; 2) incorporate a Javan Hawk-Eagle Master Plan and appoint a coordinator to head a management committee; 3) reduce risk of extinction to an acceptable level; 3) develop an environmental awareness curriculum to be included in informal education throughout the

country (Public Education and Awareness Program); 4) increase participation of local communities inside and outside the protected areas within the Javan Hawk-Eagle range; 5) train park staff in management skills, ecology, and tourist education and communication; and 6) coordinate captive management and breeding programs requiring species coordinator, studbook keeper, and a captive management committee.

### Meeting of the Commission on National Parks and Protected Areas

The Commission on National Parks and Protected Areas (CNPPA) is a unique global network of specialists under the guidance of the World Conservation Union (IUCN). In the past, CNPPA Asia-Pacific functioned as a single unit. However in recent years, the need to focus on sub-regions within the Asian Pacific has been recognized. As a result, the first meeting of CNPPA session of Southeast Asia was convened under the sponsorship of the Ministry of Forestry, IUCN, UNESCO World Heritage Center Paris, UNESCO Jakarta, and State Ministry of Environment.

The objectives of the meeting, held 13-18 May 1996, were: 1) provide a forum for protected areas personnel and specialists on protected area management in Southeast Asia and to exchange experience and information on issues and problems of mutual concern; 2) develop an action plan for addressing protected area issues of particular importance to the Southeast Asian region; 3) define a role for CNPPA-SEA in coordinating the work of international programs and conventions addressing protected area management issues in Southeast Asia; and 5) identify and promote mechanisms for strengthening CNPPA membership in Southeast Asia.

Indonesia at present has 33 national parks, 79 natural recreational parks, eight grand forest parks, and 12 hunting parks with a total area of 8.6 million ha.

### Commemoration of World Environment Day

Officiated by Indonesian President Soeharto, a national commemoration ceremony was held celebrating World Environment Day on 6 June 1996 where the Kalpataru and Adipura awards were presented to individuals and cities for their environmental works. Addressing a national meeting on the environment, the minister of environment also stressed that pollution and general destruction of coastal and marine resources has reached an alarming level. The seas constitute two-thirds of the whole archipelagic state of 1,919,444 km<sup>2</sup> and the considerable marine resources are obviously of strategic value. Indonesian seas cover an area of 8.5 million km<sup>2</sup>. Mangrove forests are being destroyed rapidly with only 2.6 million ha now left of the original 4.25 million ha in 1982. Indonesia's 81,000 km of coastline, or 14% of the world's coasts, need protection.

A similar concern would fit the biological and cultural diversity of the SEA region. The SEA mainland and its 40,000 associated islands are home to 350 million people belonging to 400 ethnic groups speaking 700 different languages and writing in over 40 different scripts. While Southeast Asia occupies only



5% of the earth's surface, it includes 20% of the South's terrestrial biota and 30% of the world's fish species.

### PHVA Workshop on Babirusa and Anoa

A PHVA workshop on Babirusa (*Babyrousa babyrussa*) and Anoa (*Bubalus depressicornis* and *B. quarlesi*) was hosted by Taman Safari Indonesia (TSI), on 22-26 July 1996. Topics of discussion covered taxonomy, species, habitat, ecology, behavior, diseases, predators, anatomy, physiology, and economic aspects.

*This report was submitted by Gen. Danudirdjo Ashari, SEAZA.*

## Chinese Association of Zoological Gardens



The third membership meeting of the Chinese Association of Zoological Gardens (CAZG) and its tenth anniversary celebration was held last October in Beijing. Dr. Seal, CBSG chairman, the Japanese Zoo Association, and the American Zoo Association were invited. Presentations by Dr. Seal, Ikeda Takamasa, and Dr. Dennis Merrit were made. They reviewed what has been done since CAZG's establishment and discussed future prospects. There are 172 members of CAZG. Three semi-captive zoos and two small-size aquariums have been established in recent years.

The secretariat of the CAZG has established a department of endangered species conservation that is responsible for coordinating the establishment of studbooks and developing conservation programs. The programs that are being coordinated include: giant panda breeding conservation program, south China tiger breeding conservation program, and crane breeding conservation program. Existing and new studbooks include: giant panda, south China tiger, red-crowned crane, black-necked crane, takin, golden monkey, eastern white stork, and Siberian crane.

The CAZG established the south China tiger conservation coordination committee last year. We cooperated with CBSG and held a south China tiger conservation workshop in April 1995. A south China tiger breeding conservation program was developed afterwards with its first meeting held in November of the same year. Another crane conservation coordination committee was set up last May. The CAZG is also applying for membership in the IUDZG. The annual meeting of the giant panda breeding committee was held in Chengdu on 10-17 December 1996. The CBSG was invited to help improve the giant panda conservation plan established in 1993. The CAZG plans to hold the second international giant panda conservation workshop in Chengdu 24-27 September 1997.

*This report was submitted by Zheng Shuling and Zhao Qingguo, CAZG.*

## India Report



### Improvement of Zoos

Some of the zoos in India today are the legacy of the Victorian age. Transforming them from menageries to centers of conservation is the highest priority for the country. This year, the main priority was improving the image of zoos of India. All the zoos have been evaluated objectively and directed to make changes as per recommendations within a specified time. This effort has inspired many zoos to take the initiative to modernize their facilities and programs. Some zoos which were situated in small areas in the middle of crowded cities have acquired new sites and are shifting to areas more favorable for both exhibiting and conserving wild animals. The zoos which have acquired new areas are: Surat, Gujarat (30 ha), Rajkot, Gujarat (33 ha), Imphal, Manipur (60 ha), Gangtok, Sikkim (198 ha), Rangapahar, Nagaland (200 ha), Pune, Maharashtra (80 ha), and Shillong, Meghalaya (40 ha).

The Bombay Zoo and the Trivandrum Zoo have also taken up the initiative for extending their areas as well as modernizing the enclosures of various species. Many other zoos are renovating or constructing new enclosures and making master plans as recommended.

### Biotechnology

Projects involving DNA fingerprinting of tiger, lion, panther, lesser cats, and endangered species of primates and ungulates funded by the Central Zoo Authority are underway at the Center for Cellular and Molecular Biology (CCMB). The CCMB is also developing a Genome Resource Bank (GRB) for endangered species of zoo animals supported by CZA.

### Training Programs

*Supervisory and Curatorial Level:* A two-week course was organized at the Mysore Zoo by the Central Zoo Authority (CZA) in collaboration with the Wildlife Institute of India in December of 1995.

*Zookeepers:* Indian zookeepers normally speak their regional language, of which there are many in the country. Therefore, an all-India zookeeper course is not feasible due to language restriction. The CZA is encouraging individual zoos in the states to organize courses for all zoos in their language area which are being funded by the CZA. Three regional zookeeper training courses were organized since last year, one at Madras for Tamil-speaking zookeepers, one at Nandankan Zoo for Bengali-speaking zookeepers, and one at Kanpur Zoo, Uttar Pradesh for Hindi-speaking zookeepers. A course for Telegu-speaking zookeepers is planned for Andhra Pradesh and for Gujarati-speaking keepers at Ahmedabad Zoo. The CZA is providing funds for these courses.

*Veterinarians:* A nine-month course in zoo animal health is being conducted yearly at the Indian Veterinary Research Institutes, Izatnagar, for zoo veterinarians in collaboration with the

India...

CZA which provided some equipment and course materials.

*Invertebrate Conservation:* Five training workshops in the southern region were conducted at different zoos by ZOO/CBSG, India in collaboration with the CZA. Some of these zoos have begun setting up invertebrate exhibits and programs.

*Botanic Education:* Three training workshops also conducted in the southern region to educate the public about plants. The workshops were a collaborative effort of ZOO/CBSG, India, the CZA, and other organizations.

*Zoo Mahout Training:* A one-month course especially designed for zoo mahouts from southern, western, and central region zoos of India which will cover medical treatment (including traditional medicine), welfare, interaction with the public, care of young and confiscated animals, and conservation. It is being organized by the CZA in collaboration with the Elephant Welfare Association and Zoo Outreach Organization/CBSG, India, and funded by Project Elephant, Ministry of Environment and Forests, and the Government of India.

*Small Population Biology:* A training workshop in small population biology and captive management using the lion-tailed macaque (LTM) as a case study took place in Coimbatore and Madras. The workshop followed the PHVA for the LTM, held in 1993, and provided technical training for implementation of recommendations by both *in-situ* and *ex-situ* managers. The first part of the course took place in Coimbatore and was devoted to small population biology for field managers with zoo personnel welcome. A two-day field visit for both field manager and zoo personnel introduced the second part of the course in Madras Zoo for zoo personnel with field managers welcome. This was funded by the CZA and organized in collaboration with Zoo Outreach Organization/CBSG India and the Forest Departments of southern states bearing LTM. Technical assistance is being provided by the Brookfield Zoo, the National Zoo, and the Woodland Park Zoo with help from the MacArthur Foundation, Smithsonian Institution, and the U.S. Fish and Wildlife Service.

*Amphibian Conservation:* A series of four workshops on exhibition and conservation of amphibians will be held in January at four southern Indian zoos. The workshops will cover how to set up an amphibian exhibit, education on amphibians, health care, and breeding and conservation. The workshops are being organized by ZOO/CBSG India in collaboration with the Melbourne Zoo, the host zoos, and the CZA.

*Welfare Training:* Members of the CZA participated in welfare training in Madras. A packet of materials including CZA Norms and Standards and relevant provisions of the Wildlife (Protection) Act was provided along with sessions on how welfare inspectors can cooperate with the CZA.

### Breeding Programs

*Tiger:* A program for planned breeding for Bengal tigers has been finalized at a meeting held in Bhopal, Madhya Pradesh in March 1996. The participating zoos and animals involved have been identified and movement of animals has begun.

*Red Panda:* The breeding program for red panda is progressing with new births and an extension of the program to other high-altitude zoos. The EEP has decided to donate another pair of red pandas for strengthening the gene pool of the species in India. Thanks are due to Dr. Angela Glatston and the International Red Panda Management Committee for constant efforts for making planned breeding of red panda a success in India.

*Pygmy Hog:* A breeding program for pygmy hog has been organized by the Ministry of Environment and Forests with technical assistance from the Jersey Wildlife Preservation Trust. The program is taking place in an isolated area near the natural habitat for the animal. The Guwahati Zoo is preparing an educational program to support and promote this important conservation effort.

### International Cooperation

International cooperation with the zoo community outside India remains an important program of the conservation strategy of India. Programs for movement of Asian elephants for breeding in U.K. and European zoos have been finalized. The Minnesota Zoo has offered a group of Nilgiri tahr to India. The tahr will be moved to Trivandrum Zoo which has experience in management and upkeep of the species.

### Publications

ZOOS' PRINT and ZOO ZEN, which provide invaluable information on different aspects of zoo management as well as *in-situ* programs, continue to be published by the Zoo Outreach Organization. A quarterly newsletter for sharing information and current topics of zoo management between Indian zoos is being regularly published by the Indian Zoo Directors Association in collaboration with the CZA. An Indian Zoo Yearbook is about to be published which will include many articles from Indian zoo personnel about technical aspects of zoo management.

### Training Outside of India

Two senior-level zoo personnel (Dr. K. C. Patro, Veterinarian, Nandankan Zoo and Mr. A. S. Dogra, Director, Chhatbir Zoo) were deputed for a short course on conservation of endangered species at the Summer School at the Jersey Wildlife Preservation Trust, Channel Islands.

### Education and Public Relations

*Film on Zoos of India:* A film on zoos of India has been produced by the CZA which covers some of the major zoos and illustrates the need for transforming the zoos into centers of conservation instead of just a place to spend leisure time. The film has been telecasted on the national television network, and it will be made available to zoos for use in their own education programs.

*Book on Zoos of India:* A book on the zoos of India giving the history as well as the current objectives and direction is being published. The book will also include a directory of nearly 350 zoos in India.

*Grassroots Activity:* Indian zoos continued to utilize the help of non-government organizations in zoo education programs. Some of these projects were funded by the CZA. Students from schools in rural areas, who normally cannot afford to visit zoos on their own, were brought to zoos during Wildlife Week. Also during Wildlife Week, the Zoo Outreach Organization distributed educational materials, largely funded by the CZA species programs (red panda, barasingha, and gharial), to nearly 50 zoos and NGOs.

*ABCs of Indian Wildlife:* An attractive poster was printed by ZOO/CBSG India in collaboration with the CZA, Indian Zoo Directors Association, the Wildlife Institute of India, and British Airways.

*Prioritization of Species:* A Biodiversity Conservation Prioritization Project has been initiated after the Rio meeting in which signatories agreed to prioritize all living species for conservation action. A series of Conservation Assessment and Management Plan (CAMP) workshops are to be undertaken to fulfill this commitment. These workshops will be organized by CBSG, India in collaboration with other agencies, organizations, and institutions in India with the CZA representing the zoo community.

*This report was submitted by S. C. Sharma, Central Zoo Authority.*

## Paraguay Project - Paraguay FIG



The Paraguay Project of the Sunset Zoological Park, Manhattan, Kansas, continues to move ahead. This project, initiated through the efforts of the Partners of the Americas, Paraguay-Kansas Partners, was first discussed in 1992. In 1994, the Director of Conservation and Research at Sunset Zoo spent the entire month of March in Paraguay. The purpose of this visit was to consult with the Directorate of the Environment of the city of Asunción, Paraguay, architects developing a masterplan for the Jardín Botánico y Zoológico, officials of the Jardín, and zoo staff. Operations were analyzed and an extensive report prepared listing ideas for consideration in developing the path the zoo should take in its renovation and rejuvenation as well as numerous short- and long-term recommendations. The second stage of the project involved the visit of Mr. Mike Quick, then General Curator at Sunset Zoo. Mike worked with the architects, and the same officials who had been contacted in 1994, to prepare a masterplan for the Asunción Zoo emphasizing the two major biologically-distinct regions of Paraguay; the Occidental, which includes the Paraguayan Chaco, and the Oriental, which is a neotropical deciduous forest. The 1994 report was incorporated *in toto* into the masterplan for the Jardín Botánico y Zoológico as Chapter VII and it continues to serve as a guideline for zoo

renovation. The 1995 Zoo Masterplan serves as the operational guide for zoo development.

In addition to working with the municipality on zoo renovation, this project evolved into the Paraguay Flora/Fauna Interest Group in late 1995. In this aspect of the project, 44 individuals in the U.S., Canada, Great Britain, and Germany and 42 individuals in Paraguay joined to work towards the development of a comprehensive wildlife conservation management program for the country of Paraguay. Paraguayan individuals involved include the U.S. Ambassador to Paraguay, the Vice-Minister for the Environment, the Director of National Parks and Wildlife, staff of the Museum of Natural History of the National University of Asunción, all major NGOs in Paraguay, the CITES offices and representatives, and the USAID and USIS Offices in Paraguay.

Excellent progress has been made in zoo renovation in the one and one-half years since the project began. Mike Quick and Robert Klemm spent from 19 July - 10 August 1996 in Asunción again talking with Paraguayans to assess the needs of these individuals both in maintaining current conservation projects and in determining the basic material needs to continue and expand their efforts. During this recent visit, they were able to travel to the city of Itaipu, location of the world's largest hydroelectric dam and the reserve set aside in its construction for protection of displaced animals. They also visited the site of the newest hydroelectric dam at Ayoles. What was once two large islands now consists of a series of many islands in various degrees of inundation. Displaced were 11,000 individuals representing 110 species (mammals, birds, reptiles). The area flooded encompassed 180,000 ha (486,000 acres). An example of the problems engendered in this project was the displacement of some 3,000-5,000 black howler monkeys (*Alouatta caraya*), many Marsh Deer (*Blastoceros dichotomus*), and thousands of snakes and endangered birds. While a biological reserve is being set up at Yacerytá, it cannot possibly handle the numbers of animals being displaced by this project. A small reserve near the dam project houses many species of endangered animals. Obviously, these two hydroelectric projects have produced major problems with which wildlife and governmental officials must deal. It is hoped that, if asked for assistance, the members of the Paraguay FIG can provide expertise to assist in the conservation efforts in these two areas as well.

While these projects are massive and will require major efforts to solve, two much more important and basic problems need to be addressed and which the Paraguay FIG and Sunset Zoo can help address. These two areas are communication and environmental education. During a visit to Asunción in August 1995, Susie Ellis and Robert Klemm met with biologists and researchers of Paraguay to discuss some of their problems. At that conference, the communication problem first was brought to our attention; it continued to be the focus of comments again in the 1996 visit. Individuals in one part of the country have no idea what is going on in other parts, and very few people know of other studies being carried out in Paraguay either by Paraguayans or by visiting scientists and researchers. To date, little effort has been

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mounted to solve that problem. The establishment of a Paraguay Wildlife Newsletter, for which funding is already in place through the FIG, was proposed. This newsletter would allow for some major communication in the country. An even better plan has since materialized. The Internet is alive and growing in Paraguay. To simplify the entire subject, the Ministry of Agriculture will shortly have a Web page on the Internet. The Paraguay FIG, in conjunction with the CITES office, will have a page on the site which will be updated continuously with information coming in from all workers in the area. The CITES office will be the collecting point for message sent in and will distribute the information on the Web page. Because access to the Internet remains limited, the CITES office will also collate the information and will publish a newsletter quarterly which will be distributed to all known workers and researchers in Paraguay. Names of every known field biologist, exotic animal veterinarian, and any other individuals having information on Paraguayan wildlife activities are being collected to be included on the distribution list for that newsletter.

On the same level of importance as the communication problem is that of an effective and well-organized environmental educational program. Fortunately, a large building on the grounds of the Jardín Botánico y Zoológico of Asunción has been converted into the Center for Environmental Education (Centro de Educación Ambiental). Funds from the Swiss Government have provided a state-of-the-art computer, printer, classrooms, libraries, large-screen TV, and VCRs for use in this center. This center has been made available to hold a 1997 Environmental Education Conference. This conference will be organized and planned by the Director of the Education Center and the Projects Director for Asunción. It will bring environmental educators (not administrators) together for a three-day interchange from all the NGOs in Paraguay, from the Ministries of Agriculture, Education and Culture, and National Defense, from the groups at Itaipu and Yacerytá, and from governmental and municipal agencies in Paraguay.

The Faculty of Veterinary Medicine at the National University was contacted for possible training of Paraguayan veterinarians and biologists working in zoos on exotic animal medicine. This idea was presented at the Second National Veterinary Conference at the National University on 8 August 1996 and to the Dean of the College on 1 August of the same year. The response was enthusiastic and the need is great.

Finally, a Red Book conference was held in Paraguay in September 1995 aimed at identifying all endangered species in Paraguay and their level of threat. The data from this project are being collated and they will be used to formulate the basis for a national wildlife conservation plan. With this plan in place, expert members of the Paraguay FIG will be immediately available for consultation and assistance to Paraguay in the implementation of the plan.

Several other important movements are taking place in Paraguay, but they are only at the planning level. Things

sometimes move slowly and frustration levels are sometimes high. But having identified some of the basic needs of the workers in Paraguay, it is believed that all parties can bring Paraguay into the international area of wildlife conservation and management.

*This report was submitted by Dr. Robert D. Klemm, Director of Conservation and Research, Sunset Zoological Park, and Michael D. Quick, Curator of Mammals, Sedgwick County Zoo, Co-Chairs, AZA Paraguay Fauna/Flora Interest Group.*

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## **EAZA/EEP Report**

### **EAZA 1996 Annual Meeting**

The EAZA Annual Conference was held in Saumur, France and over 250 participants from 140 zoos and other related institutions from 25 countries enjoyed the hospitality offered by host Zoo Doué la Fontaine. Over 60 EEP Species committees, TAGs, several EAZA working groups, and other committees met during the course of the five-day conference. Four plenary sessions on conservation involvement of EAZA institutions and European collection planning were also well attended.

The EEP Taxon Advisory Groups are becoming more and more involved in *in situ* conservation. The Annual General Meeting of EAZA was conducted on 22 June and presided over by EAZA Vice Chairman Enric Mas. Some 75 full member institutions from 17 countries were present at this meeting. Several European zoo legislation issues, EAZA support to east and central European zoos, and progress made regarding developing EAZA's new constitution were among the issues presented in the annual reports of the EAZA committees and working groups. A recommendation put forward by Council on an EAZA surplus animal policy was unanimously approved at the AGM.

The EAZA was also invited by a representative of the European Center for Nature Conservation to participate in the "Establishment of an Action Program for Threatened Species in Europe." The EAZA Annual Conference was well covered by the French media; news updates on the meetings were provided by several major French TV stations and by many regional and national newspapers on a daily basis.

### **EAZA Council Meetings**

Council meetings were held in Prague in October 1995, in Rotterdam in March 1996, and in Saumur in June 1996. Most EAZA committees and working groups met regularly to table relevant issues and to prepare policy to be submitted to EAZA Council for further discussion and approval.

Attendance of the EAZA Council Meetings is quite high; some 15 European countries are generally represented at these meetings.

### **EAZA Membership and Ethics Committee**

The EAZA Membership and Ethics Committee met three times during this report period. Fourteen zoological institutions were accepted as full members in the past year and, consequently, EAZA now has 221 full, temporary, and associate members in 26 countries as of 1 July 1996.

The current number of EEP participants is approximately 400 from 36 European and 13 non-European countries. About 190 of these are members of EAZA and, consequently, more than 200 institutions - the majority - are participating in one or more EEP without financially contributing to the organization of these programs. The EAZA has consequently decided to start charging these institutions a modest EEP participation fee as of 1 January 1996.

The final draft for the EAZA Code of Ethics was submitted to EAZA Council in November 1995. No negative comments or amendments were received and consequently Council decided to use this document as the guideline in appropriate cases, such as membership acceptance and disciplinary actions. The final text will be submitted for membership approval at the next annual general meeting.

Last but not least, the first EAZA membership list and a new EAZA logo were produced in 1996 and distributed for use among EAZA members.

### **EAZA Veterinary Committee**

Much attention was devoted to the proposed European Zoo Directive/Recommendation, the Balai Directive, the Transport Directive 91/628/EEC, and the proposed "European" Quarantine Station at Parco del Fusaro, Italy.

Implementation of the Bali Directive may prevent importation of animals from outside the European Union because, although there is provision in the directive for such imports, the European Commission has not yet drawn up lists of countries, or zoos in those countries, which are of similar status to those in the EU. This may preclude many European zoos from exchanging animals and, consequently, would jeopardize the existence of many EEPs.

Additionally, the Veterinary Committee produced a first draft report on contraceptive methods in zoo animals. The report includes an overview of drugs which have been used by zoos and some of the potential hazards.

### **EAZA Legislative Committee**

A successful meeting between officers of the European Commission and members of EAZA and its Executive Office was held at Antwerp Zoo, Belgium in February 1996. The EC was prepared to reword several sections of the European Zoo Directive/Recommendation according to the suggestions made by EAZA. However, it is extremely unlikely that this proposed zoo legislation will proceed as a directive. It is more likely that a weaker recommendation will be accepted by the European Commission, although this is by no means certain.

A proposal for a "Commission Regulation on the Implementation of the Council Regulation (EC) on the Protection of

Species of Wild Fauna and Flora by Regulating Trade Therein" has been drafted. This new CITES regulation will become effective by 1 January 1997 or 1 April 1997, subject to agreement on the implementation.

### **EAZA Research Committee**

The 338-page proceedings of the first European conference on "Research and Captive Propagation" held in 1994 were published in 1996. The second conference in this series was held at Usti nad Labem Zoo, Czech Republic, 19-22 October, 1995. The conference was attended by 80 participants representing zoos and research institutions from 11 European countries. The general theme of the conference was "adaptation of animals to captive conditions."

The "International Symposium on Physiology and Ethology of Wild and Zoo Animals" took place in Berlin from 18-21 September, 1996. This was the first time that a research conference was conducted jointly by the EAZA Research Committee and the Institute for Zoo Biology and Wildlife Research (IZW).

A database on research projects carried out in European zoos and on scientists and their fields of interest (taxa and scientific field) was developed by the Research Committee. An overview of the results of this project will soon be available to all EAZA members.

The annual EAZA Research Committee newsletter was distributed to some 60 institutions in 1995. The newsletter contains information on relevant conferences, current research projects, and questions with general implications for future research.

### **EAZA Education/Exhibit Design Committee**

This new EAZA committee is chaired by Lars Lunding Andersen of Copenhagen Zoo. The committee has concentrated on five main topics during the past six months: 1) development of education standards for EAZA zoos; 2) production of an EAZA policy paper on "zoos as interpretation institutions;" 3) organization of the International Zoo Educators (IZE) Conference held in Copenhagen, 1-7 September 1996 with the main theme being "Education/Interpretation - a vehicle for changes," and the proceedings to be produced as an up-to-date "handbook on zoo education;" 4) development of a bibliography of selected articles on zoo education and exhibit design; and 5) improvement of networking between EAZA's Education/Exhibit Design Committee, IZE, and IUDZG's PR/Marketing/Education Committee. A meeting including all relevant parties was held at the IUDZG meeting in Denver.

### **EAZA-EEP Committee**

The EEP Committee met twice during the report period in Prague, Czech Republic on 9 November 1995 and in Saumur, France on 20 June 1996. Many of the issues are summarized in this report.

### *EEP TAG Reports*

Major EEP activities in the past year included the publica-

## EAZA/EEP...

tion of two volumes of the EEP TAG surveys. The TAG surveys have received a great deal of attention and they are seen by many European zoos as one of EAZA's most significant achievements because the surveys provide them with an insight on the status of many species within the European zoo world. As many zoos do not (yet) participate in ISIS or even publish an annual animal inventory list, the TAG surveys are the only comprehensive publications on the Pan-European animal collection. The fifth survey, including among others the hornbills, felids and antelope, has recently been distributed. Many of the taxa that are currently being surveyed were also surveyed in 1993/94 and the results will provide us with an interesting update on the status and trends (have populations increased or decreased?) of some of the more common and non-managed taxa in European zoos. Zoos were also requested to provide data on their collection plans in regards to the surveyed taxa. Over 150 European institutions have already responded to the surveyed taxa.

## New EEP Taxon Advisory Group

The approval of the initiation of a Falconiformes TAG to be chaired by Jemima Parry-Jones of the Falconry Center in Newent, UK brought the current number of functioning TAGs in the EAZA region to 25. Chairs for at least five additional taxa urgently need to be located; these taxa are the canids, ratites, waterfowl, galliforms, and coraciiforms (excluding hornbills).

The EEP Invertebrate TAG was renamed the EEP Terrestrial Invertebrate TAG and it will continue to be chaired by Paul Pearce-Kelly, London. Thomas Kauffels was proposed as new co-chair of the Pigs and Peccary TAG.

Draft guidelines for the functioning of EEP TAGs are being prepared by Caroline Lees of the Federation of Zoological Gardens of Great Britain and Ireland and Angela Glatston of Rotterdam Zoo.

## New European Endangered Species Programs (EEP)/European Studbooks (ESB)

The eight taxa were approved for EEPs by the EEP Committee and approval was endorsed by EAZA Council. This brings the current number of EEPs to 120. The taxa were: partula snails, *Partula* spp. (Paul Pearce-Kelly, London); green-cheeked amazon, *Amazona viridigenalis* (Mark Pilgrim, Chester); red-fronted macaw, *Ara rubrogenys* (David Woolcock, Hayle); pied tamarin, *Saguinus bicolor bicolor* (Bert de Boer, Apeldoorn); margay, *Felis wiedii* (Pat Mansard, Ridgeway Trust for Endangered Cats, Hastings); Sri Lanka leopard, *Panthera pardus kotiya* (Thierry Jardin, Cerza, Hermival les Vaux); European bison, *Bison bonasus* (Wanda Olech-Piasecka, Institute of Biological Foundation of Animal Breeding, Brwinow); and Nile lechwe, *Kobes lechwe* (Nick Lindsay, Whipsnade).

Twenty taxa were approved as ESBs by the EEP Committee and approval was endorsed by EAZA Council. This brings the current number of European studbooks to 41. The approved taxa were: rhino iguana, *Cyclura cornuta* (Rudolf Wicker, Frankfurt

Zoo); Steller's sea eagle, *Haliaeetus pelagius* (S. Aliskerov, Moscow Zoo); western crowned crane, *Balearica p. pavonina* (Dieter Rinke, Vogelpark Walsrode); Asian pied hornbills, *Anthuracoceros* spp. (Simon Tonge, London Zoo); red and blue lory, *Eos histrio* (Roger Sweeney, Puerto de Cruz); Mount Apo lorikeet, *Trichoglossus johnstoniae* (Roger Sweeney, Puerto de la Cruz); hapalemurs (Claude-Anne Gauthier, Paris); crowned lemur, *Eulemur coronatus* (Pierre Moisson, Mulhouse); red-bellied lemur, *Eulemur rubriventer* (Pierre Moisson, Mulhouse Zoo); two-toed, *Choloepus didactylus*, and Hoffmann's slothes, *C. hoffmanni* (Jutta Heuer, Halle); binturong, *Arctictis binturong* (William Lewis, Southport); African warthog, *Phacochoerus africanus* (Paul Vercammen, Safaripark Beekse Bergen); aardvark, *Orycteropus afer* (Joep Wensing, Arnhem); bactrian deer, *Cervus elaphus bactrianus* (Waltraut Zimmermann, Cologne Zo); nyala, *Tragelaphus angasii* (Cristiane Silveira, Lisboa Zoo); greater kudu, *Tragelaphus strepsiceros* (Joep Wensing, Arnhem); blesbok, *Damaliscus dorcas phillipsi*, and bontebok, *D. d. dorcas* (Hanny Verberkmoes, Safaripark Beekse Bergen); blue duiker, *Cephalophus monticola* (Joep Wensing, Arnhem); and blue sheep, *Pseudois nayaur* (Jean-Luc Berthier, Paris, Menagerie).

New EEP Coordinators and ESB Keepers for existing programs are: black-footed penguin EEP (Jaap Govers, Natura Artis Magistra, Amsterdam); Steller's sea eagle ESB (Lubov Kurilovich, Moscow); hyacinthine macaw EEP (Steffen Patzwahl, Parc Paradisio, Cambon); golden-headed lion tamarin EEP (Kristin Leus, Antwerp); drill EEP (Andreas Knieriem, Hannover); siamang ESB (Graham Catlow, Edinburgh); giraffe EEP (Gunther Schleussner, Stuttgart); and Hartmann's mountain zebra EEP (Jaroslav Zima, Usti nad Labem).

New EEP Coordinators are needed for the European otter EEP and the sloth bear EEP.

## EEP Yearbook

The EAZA gratefully accepted a US\$15,000 grant from the German Isler Stiftung to support the printing of the EEP Yearbook 1994/95. The 1994/95 EEP Yearbook included 536 pages and was distributed to all EAZA members, EEP Coordinators, TAG chairs, regional zoo associations, and miscellaneous nature conservation related NGOs in December 1995.

Two EEP species coordinator training courses were conducted in Amsterdam during the report period. Additionally, the EAZA staff also organized several external training courses in Germany, kindly hosted by Tierpark Berlin and Frankfurt Zoo. Over 30 coordinators and studbook keepers attended and appreciated these courses.

## EAZA Available and Wanted List

This most useful publication is distributed quarterly to all full EAZA members. Participation, although not mandatory, is on the rise and currently some 65% of the member institutions regularly submit their available and wanted data for inclusion in the list. All regional zoo associations also receive the EAZA Available and Wanted List.

## CITES

Frequently, EEP Coordinators and TAG chairs are asked for advice by national or international CITES authorities regarding decisions to provide import or export permits for CITES listed species. Additionally, several of the national CITES authorities, as well as the European Commission, are interested in exploring the possibility of using EAZA's extensive network for placement of confiscated animals in Europe.

## Moscow EEP Tiger Meeting

The EAZA Office assisted in preparation of the EEP Amur tiger meeting in Moscow, 2-3 November 1995. A general paper was presented by a member of the EAZA staff. Additionally, the EAZA staff assisted in the running of working groups on EEP Amur tiger policy issues and veterinary management of tigers in the EEP. This conference was successful and the large number of participants from the former Soviet Union and eastern Europe was especially rewarding. Improved cooperation and incorporation of valuable tigers into the program was agreed upon at the Moscow meeting. A team of experts collected important genome material from Amur tigers in the former Soviet Union in September 1996.

The chairman of EAZA's EEP Committee and the EAZA director are prepared to sign the Genome Resource Banking Memorandum of Agreement to underline the interest of the European breeding program region in such activities for tigers.

## Other Meetings and Consultancy

The EAZA Office staff presented papers at several other international conferences and workshops throughout Europe; for example, a workshop on large bear enclosures in Rhenen, The Netherlands, and zoo training workshops in Galati and Constantza, Rumania. A most important meeting was attended on "Innovative Financing Opportunities for European Biodiversity" organized by the European Center for Nature Conservation in Eindhoven, The Netherlands in June 1996. Nature conservation organizations and funding agencies met each other to discuss a cooperative approach towards saving global biodiversity.

The EAZA Office staff is often requested to provide presentations on EAZA and zoo cooperation to boards of directors of EAZA member zoos throughout Europe. Additionally, requests to inspect zoos are also being received from local or national authorities, often after NGOs or other bodies have put forward heavy criticism, that needs to be verified by a relatively independent, but nevertheless knowledgeable, team of zoo experts.

Interestingly, the EAZA is also receiving an increasing number of requests from organizations such as the Born Free Foundation and GAIA to assist these in the placement of inadequately-treated zoo animals from poorly-managed zoological gardens in several European countries.

## ZRBOOK Studbook Software

The ZRBOOK-SPARKS conversion program, developed by the Dutch National Foundation for Research in Zoological Gardens with financial support of IUDZG and the Federation of

Zoological Gardens of Great Britain and Ireland, will be made available through ISIS to all its members.

A new version of ZRBOOK, the European breeding program management software, is near completion. However, financial support by the some 50 EEP coordinators and international studbook keepers using this program is required to finish the software. This new version will be the last update of ZRBOOK because it is of great importance that work is initiated on the production of the new generation of software, combining the best of SPARKS and ZRBOOK in one global program.

## EEP Conservation Donations

An increasing number of EEPs wish to request a financial contribution from its (potential) participants for *in situ* conservation. A donation to a selected conservation project as alternative payment for acquiring EEP species (fund raising for *in situ* conservation programs) was accepted by the EEP Committee under the following conditions: 1) the EAZA Office be informed in advance on any plans in this regard by the relevant EEP Coordinator; 2) a description of the conservation project in question needs to be submitted; and 3) terms of management of received funds have to also be accepted.

## Acceptance of Non-European Zoos within EEP Programs

A general policy on the acceptance of non-European zoos within EEP programs is already available and it can be consulted in the EAZA Guidelines for EEP coordinators. The EAZA/EEP Office once again notified all EEP coordinators that institutions outside the European region can only be accepted if certain criteria are fulfilled and if the EEP Committee grants official permission to the EEP Coordinator.

## Questionnaire

An extensive questionnaire was distributed amongst all EEP Coordinators and EEP TAG Chairs early 1996. Some 50% of all those surveyed have completed the questionnaire and the first preliminary results were presented at the EAZA Conference in Saumur.

## Dealers within the EEP

A proposal by the EEP Committee not to allow animal dealers or brokers to participate in any of the EEPs was put forward and accepted by EAZA membership at the EAZA Annual General Meeting.

## CIRCC

The EAZA Office regularly provided updates for inclusion in the CIRCC Newsletter. Additionally, advice was provided to the IUDZG/WZO president, Satch Krantz, on the format of the proposed WZO International Training Workshop.

## EAZA Working Group on Support to Zoos in Central and Eastern Europe

The Working Group on Support to Zoos in Central and



*British Isles...*

Eastern Europe is currently chaired by Miklos Persanyi of Budapest Zoo and Bert de Boer of Apenheul Primate Park, The Netherlands. There were four major areas of activity in the past year:

1) *Training:* An initial training curriculum was developed for Central and Eastern European zoo professionals with strong emphasis on conservation issues and zoo management in market economies. The goal of this curriculum was to accelerate information transfer and assist colleagues working in countries in transition. A training workshop for Rumanian zoo and museum professionals was implemented by EAZA in cooperation with the Rumanian zoos and government authorities in November 1995. One of the results of the meeting was the establishment of the Federation of Rumanian Zoos in June 1996. Follow-up activities by EAZA have included sending zoo information packages to Rumanian institutions and providing assistance in zoo design at two institutions.

2) *ZICs:* A major activity of EAZA this year was the initiation of Zoo Information Centers (ZICs) in Prague, Budapest, Riga, and Warsaw. These satellite offices of EAZA will serve as clearing houses for information on zoo management in the broadest sense of the word. The zoo centers can communicate with the zoos in their own country in their own native tongue and they can send requests for information to EAZA headquarters. The EAZA will consult with experts on the issue of concern and provide them with the requested information. They consequently can translate these answers into their own language and direct it to the zoo that initially forwarded the request. The staff of the centers received a basic training from EAZA in April 1996. The EAZA will also provide the centers with relevant documentation and, if necessary, send zoo consultants recruited from our EAZA membership in any field that might be necessary to that specific country. The EAZA's Working Group on Support to Zoos in Central and Eastern Europe recently proposed the initiation of a new Zoo Information Center in Kiev Zoo, Ukraine. Additionally, a zoo biology workshop for Hungarian zoos as well as a working trip to Rumania to assist in the development of master plans for several zoos were scheduled for autumn 1996.

3) *Technical Assistance in Zoo Design:* The EAZA received requests from Galati Museum Complex, Tirgoviste Zoo, and the Aquarium of Constanta, all in Rumania, for assistance in redesigning their facilities. Additionally, a request was received by EAZA through the EC TACIS Program to assist with the master planning of Kaliningrad Zoo, Russia.

4) *Sister Zoo Contacts:* Several sister zoo contacts have been made between Western and Eastern European institutions and national zoo federations in 1995/96. Scientific cooperation, exchange of zoo professionals, provision of travel grants, internships, and assistance in payment of membership fees for ISIS and/or EAZA are some of the interactions occurring.

### Structure of the EAZA Executive Office

An important change took place within the organization of

EAZA in 1996. As of April 1996, the EEP Executive Office no longer officially functions independently of the EAZA Administrative Office. The EAZA has now contracted the Dutch National Foundation for Research in Zoological Gardens to perform all EAZA duties for a period of three years and pays the salaries of three staff members in Amsterdam. Dr. Koen Brouwer has been appointed by EAZA as director and he is in charge of the day-to-day organization.

### EAZA Newsletter and European Zoo Archive

The EAZA Council approved a proposal put forward by its Executive Office to redesign its current newsletter. The first issue of this new publication will be appear in the fall of 1996. The new magazine will include more news from the members; all members of EAZA were requested to provide the editorial board with copies of relevant press releases, annual reports, animal inventories, and guide books. The EAZA is also working towards establishing a large European zoo archive of studbooks, zoo books, guide books, zoo videos, annual reports, and other relevant publications. All contributions, including those of non-European zoos, are welcome. This zoo archive should develop into a European center for zoo- and conservation biology-related information for zoos, students, media, and other concerned parties.

### EAZA Conservation Survey

Caroline Lees of the Federation is currently assisting EAZA in conducting a survey on conservation activities undertaken by EAZA members specifically and European zoos generally. A similar survey was conducted previously in the UK with very positive results. The first preliminary results of the questionnaire are expected later this year.

*This report was submitted by Dr. Koen Brouwer, Director, EAZA.*

## British Isles Regional Report

### Organization

With the impending retirement of two of the Federation's staff (Director, Mr. Peter Olney and Administrative Secretary, Rosemary Potter), a working group was formed to consider the future structure and function of the Federation. All members were asked their views on the current strengths and weaknesses of the Federation and on current and future priorities. Based on this and on available funds, a revised staffing structure consisting of a Director, a Conservation Coordinator, and a Secretary was proposed and accepted at the Federation's Annual General Meeting at Dudley Zoo in May.

### Support for the EAZA/EEP

The Federation is a member of, and strongly supports the



work of, the European Regional Association (EAZA). During the past year, the Federation has 1) helped with the EEP Coordinators course; 2) helped with the EEP Yearbook publication; 3) has expanded its own database of *in-situ* conservation involvement to include EAZA members; and 4) is currently assisting with the production of guidelines for European TAG Chairs.

### Activities of the Federation's Committees

#### *Conservation and Animal Management*

This Committee has continued to set policy, to monitor, and to advise members on matters relating to animal management and conservation activities. Issues at the forefront of discussions over the last year have included the British Isles (BI) implementation of the Balai Directive, BI animal transport regulations, Bovine Spongiform Encephalopathy in zoos, and disposal of surplus stock.

#### *Joint Management of Species Committee*

In terms of species management, the BI forms part of the European Region. As such, both BI TAGs and Joint Management of Species Programs (JMSPs) become subordinate to European TAGs and programs once these are established. There are currently 24 active BI TAGs; five previously-active ones now function at the European level only. For the first time this year, a standardized assessment of BI TAG progress was carried out. This was partly a means of self-assessment for TAGs and partly a process by which common problems could be identified and addressed.

With an increasing number of European studbooks becoming established, the need to maintain separate JMSP studbooks for certain taxa is continually under review. The Australasian system of species management categories is being adopted with some modification for use in the BI to clarify the different levels of management in operation.

Each TAG is responsible for producing a leaflet describing its work for use in publicity and marketing; nine are now available. Three new Federation information leaflets are also now available: *Reintroduction of Zoo Animals*, *Welfare of Zoo Animals*, and *Zoos and Conservation in the Wild*.

Two new *Management Guidelines for the Welfare of Zoo Animals* publications were produced through the TAGs during the past year: *Veterinary Guidelines for Felids* and *Guidelines for using Birds of Prey in Flying Demonstrations*. Others in this series are in draft form.

The JMSP Annual Report, detailing the work of the BI TAGs and of the Joint Management of Species Committee during 1995, was published in May 1996.

#### ***In-situ* Conservation**

The database of *in-situ* conservation projects in which individual Federation members are involved has been updated. In addition, TAGs have been asked to identify at least one field project for Federation support. Information has been gathered on potential funding sources. So far, three unsuccessful funding applications have been made, but work will continue in this area.

### Research Group

Research needs identified by the TAGs continue to be circulated to contacts in university departments as a means of channeling students into priority areas for research. The Group is currently focusing attention on developing larger collaborative projects for which it will actively source funding. The first of these will be an environmental enrichment study of cockatoos. A close liaison is maintained with the EAZA Research Committee.

### Native Species

The Federation's commitment to the conservation of species native to the BI has continued and expanded over the past year with members contributing to conservation programs for 14 species. The Federation works within the UK's statutory conservation framework, and it has contributed to such documents as the Joint Nature Conservation Committee (JNCC) *Framework for Otter Conservation in the UK 1995-2000*, and recently launched *UK Strategy for Red Squirrel Conservation*.

### Marketing and PR

Over the past year, the Marketing and PR Committee's major drive has been a national campaign called *Tiger Week*. During May, a week was set aside in which Federation member collections were asked to campaign specifically to raise awareness and funds for tiger conservation in the wild.

The campaign working group, with financial assistance from ESSO UK, organized general publicity for the event which included: a *Tiger Week* logo which was incorporated into posters, T-shirts, and badges; tiger head collecting boxes; a World Wide Web page; and an enormous amount of media coverage both before and during *Tiger Week*. Individual collections organized their own events during the week, hosted talks and slide shows, auctioned artwork depicting tigers, and ran raffles and competitions.

The funds raised are to be distributed between three field conservation projects in India, Siberia, and Sumatra. So far, over £50,000 have been raised, and fund-raising activities will continue throughout the year. Most importantly, the week was hugely successful at drawing attention to, and fostering an understanding of, the problems facing the tiger, the reasons for its decline, and the factors limiting its recovery.

### Education

The Education Committee has recently completed its *Recommendations for the Establishment of Education Standards in Member Zoos of the Federation of Zoological Gardens of Great Britain and Ireland*.

The 1995 Annual Conference of British Zoo Educators took place on 9-12 November at Dudley Zoo. Fifty-six delegates attended; topics presented and discussed included: marketing to schools, interpreting enrichment and behavior to the visitor, team approaches to exhibit design, and animal welfare issues. A workshop on species selection investigated the feasibility of establishing widely-applicable, education-based criteria for selection capable of assessing the comparative education value of

*U.K. Report...*

different species. This proved a popular exercise and work has continued to refine the system further.

Progress is continuing with the rewriting and updating of the *City and Guilds Zoo Animal Management Course* which is available to zoo staff worldwide.

**Membership and Licensing**

The Federation of Zoological Gardens of Great Britain and Ireland currently has 60 member collections and 50 Associates.

A review of the Zoo Licensing Act (1981) is currently being carried out by the Department of the Environment, and the Federation has been one of the main consultants.

*This report was submitted by Caroline Lees, Conservation Coordinator, FZGGBI.*

## American Zoo and Aquarium Association Report

The American Zoo and Aquarium Association (AZA) represents 176 of North America's best zoological institutions and nearly 7,000 zoo and aquarium professionals. In 1980, the AZA declared wildlife conservation as its highest priority. Since then, many cooperative programs have been developed to help reach this goal, including Species Survival Plans (SSPs) for single species management and conservation, Taxon Advisory Groups (TAGs) for regional collection planning, Fauna Interest Groups (FIGs) for facilitating field conservation initiatives in specific geographical regions of the world, and Scientific Advisory Groups (SAGs) to provide technical assistance.

The AZA currently has 79 SSPs covering 131 species, 43 TAGs, eight FIGs, and eight SAGs. In addition, AZA institutions manage 264 regional and international studbooks. The AZA Conservation Program is facilitated and supported by the AZA Conservation and Science (C&S) Office in Bethesda, Maryland working closely with the AZA Board of Directors, Wildlife Conservation and Management Committee (WCMC), and Field Conservation Committee (FCC).

Among the most important developments this past year which may be of interest to our international colleagues include:

**SSP/Population Management**

A series of three workshops were held to study studbook databases and develop standards for North American studbooks. The workshops were funded by a US\$25,000 grant from the Institute of Museum Services to the Lincoln Park Zoological Gardens, Chicago, IL. The C&S staff and other AZA Small Population Biology Management Group (SPMAG) members participated in this meeting which resulted in the development of

the first edition of *Guidelines for Data Entry and Maintenance of North American Studbooks*. This document will guide the training of studbook keepers in the North American region and could potentially be adapted for use in other regions as well.

The AZA Population Management Plan (PMP) was implemented. This PMP-level management is not as intense as SSP-level management, but it is intended to provide basic population management for zoo-held populations identified as priorities for collective population management in Regional Collection Plans. Breeding priorities are established by studbook keepers working with an advisor from the AZA Small Population Management Advisory Group. A total of 120 PMP programs have now been registered with AZA.

**TAG/Strategic Collection Planning**

The AZA C&S office is compiling a computer database of Regional Collection Plan (RCP) recommendations for distribution in institutional collection planners. As of July 1996, a total of 17 of 43 TAGs (39.5%) have initial RCPs on file in the AZA C&S office; as many as 12 more intend to have RCPs in place by 1997. Other TAGs are either new or the taxa they cover are not conducive to developing a typical RCP (e.g., aquatic invertebrates). It is hoped that the RCP database will provide an important tool for institutional collection planners in the North American region.

**FIG/Field Conservation**

In 1995, the AZA C&S office received a US\$35,000 grant from the National Fish and Wildlife Foundation to coordinate a program analysis and action planning process for the Black-footed Ferret Recovery Program. The C&S office subsequently organized and held three planning meetings which brought together representatives from all cooperating agencies. The project has now been completed and a report has been forwarded to the U.S. Fish and Wildlife Service for review and action.

The AZA C&S staff organized and moderated a panel discussion titled "Zoos, Ecotourism and Conservation" at the 1995 AZA Annual Conference in Seattle, Washington. The panel, which focused on the evolving role of zoos and aquariums in ecotourism, featured Russell Mittermeier (Conservation International), Megan Epler-Wood (Ecotourism Society), Nina Fascione (Defenders of Wildlife), Joyce Basel (FunSafaris), Richard Mills (International Expeditions) and Robert Horwich (Community Conservation Consultants). Proceedings were edited by M. Hutchins and published in the 1995 *AZA Annual Conference Proceedings*.

A petition for an AZA North American Fauna Interest Group (NAFIG) has been completed and submitted for WCMC approval. The C&S office developed the concept for a North American FIG last year to help facilitate the work of AZA members on field conservation issues affecting the native wildlife of the North American region. The NAFIG should provide a forum for planning and discussion with relevant government agencies and be a clearinghouse of information on North American conservation issues.

The AZA staff and members of the aquarium community have worked together to conceptualize and develop a preliminary proposal for an AZA Coral Reef Initiative. Designed to raise awareness of the plight of coral reefs worldwide, the project will involve support of aquarium-based education, conservation, scientific, and public relations efforts aimed at coral reef conservation. Preliminary discussions regarding funding have occurred with several potential corporate donors and foundations.

In 1995, the AZA and its Freshwater Fish Advisory Group signed a Memorandum of Understanding (MOU) with several U.S. government agencies, including the U.S. Fish and Wildlife Service, National Park Service, National Marine Fisheries Service, Bureau of Land Management, and U.S. Forest Service. Approved by the AZA Board of Directors, this historic MOU provided the basis for a cooperative effort on behalf of aquatic conservation in the United States and its associated territories. Representative of these agencies and AZA met on 9 June and 12 July 1996 at the National Aquarium in Baltimore to discuss implementation, including specific cooperative projects that might be undertaken.

### SAG/Science

A symposium on "The role of zoos and aquariums in avian conservation and science" was held at the 1996 Annual Conference of the American Ornithologist's Union (ASP) in Boise, Idaho. Papers were presented by AZA C&S staff and scientists from several AZA member institutions.

A symposium on "The evolving role of zoos in primate conservation" was held at the 1995 Annual Conference of the American Society of Primatologists in Scottsdale, Arizona. Papers were presented by C&S staff and scientists from several AZA member institutions. The AZA has developed a formal liaison with ASP and the symposium proceedings will be published by ASP.

### Marketing and Development

The following marketing and development achievements were noted:

1. A US\$102,000 grant was received from the Disney Wildlife Conservation Fund.
2. A total of US\$250,000 was allocated by the AZA Board from the AZA Conservation Endowment Fund.
3. A grant of US\$40,000 was received from the Ralston Purina Company to support felid projects.
4. The AZA disbursed a record US\$374,000 to AZA institutions and collaborators to conduct a total of 22 conservation and research projects, ranging from fieldwork on Jamaican iguanas to methods used to propagate live corals to international training programs in Southeast Asia and Brazil.

### Training and Technology Transfer

The AZA C&S office organized and moderated a meeting focused on AZA's potential role in international training and technology transfer. The meeting, held in Bethesda, Maryland from 8-9 December 1995, was attended by nearly 15 experts

from AZA member institutions with direct experience in international programs. The primary recommendations of the meeting were: 1) that AZA and its member institutions have a professional obligation to assist their colleagues in developing countries through professional training and technology transfer; and 2) that all AZA-supported international training workshops should be organized by AZA's Fauna Interest Groups (with assistance from the AZA C&S office) and fully integrated into zoo and aquarium-based conservation programs for particular regions of interest.

The AZA was invited by Brazil's Ministry of the Environment (IBAMA) to organize a series of training programs for Brazilian zoo personnel and wildlife managers. Grants have been received from the AZA Conservation Endowment Fund and Disney Wildlife Conservation Fund to conduct workshops on basic animal husbandry and record keeping/studbook management. Efforts are also underway to fund support for species management and veterinary courses. Similar planning efforts are underway for other regions covered by AZA FIGs.

The AZA C&S staff and FIG chairs participated in the "Training Needs Assessment Workshop" organized by the World Zoo Organization (WZO) from 20-21 August in Denver, Colorado. Packages of information on AZA international training workshops and schools were distributed to all regional coordinators in attendance.

### Ethical Issues

The AZA C&S staff participated in a panel discussion on zoos and animal welfare/rights at the 1996 AZA Regional Conference in Denver, Colorado. The first volume in the AZA/Smithsonian book series, *Ethics on the Ark: Zoos, Animal Welfare and Wildlife Conservation*, has sold out and it has been reprinted in paperback. The book has received excellent reviews in several publications, including *Zoo Biology* and *The Boston Globe*.

### Publications

The AZA developed a cooperative relationship with *Endangered Species Update*, a monthly publication by the University of Michigan's School of Natural Resources and the Environment, which goes to state and federal wildlife agencies. Published monthly, each edition now includes reports on AZA conservation and science programs.

The second volume in the AZA/Smithsonian Institution Press book series titled "Studies in Zoo and Aquarium Biology and Conservation" has been completed. Edited by David Shepherdson, Jill Mellen, and Michael Hutchins, *Environmental Enrichment for Captive Animals* consists of 19 contributed chapters. It should be available in early 1997.

The 1994-95 AZA Annual Report on Conservation and Science was published and distributed regionally and internationally (edited by K. Swaringen, R. Wiese, K. Willis, and M. Hutchins).

The AZA C&S staff published 16 articles and book chapters in 11 different journals and books, including *Wild Mammals in*

AZA...

*Captivity, Conservation of Endangered Species in Captivity, Conservation Biology, Zoo Biology, Trends in Ecology and Evolution, International Zoo Yearbook and Endangered Species Update.*

### Government Affairs

The AZA Director of C&S, Michael Hutchins testified at a U.S. Congressional Subcommittee hearing on the African Elephant and Rhino and Tiger Conservation Acts. The Act could provide over US\$1 million in support of elephant, tiger and rhino conservation in 1997.

### Public Affairs

Michael Hutchins also appeared on World Net's "Talk to America" television program on 24 July 1996 along with Heidi Jamieson of the Philadelphia Zoo. The program, which focused on the evolving role of zoos and aquariums in conservation, was televised live to many European, African, Asian, and South American countries and simulcast on radio by the Voice of America. Dr. Hutchins mentioned the important work of IUDZG-The World Zoo Organization and IUCN-The World Conservation Union and The World Zoo Conservation Strategy.

*This report was submitted by Dr. Michael Hutchins, Dr. Robert Wiese, and Dr. Kevin Willis, AZA C&S office.*

## Genome Resource Banks in Africa

The Wildlife Breeding Research Center (WBRC) is a working group of the Endangered Wildlife Trust (EWT), a non-profit, non-governmental organization with the mission of conserving the diversity of species in Southern Africa. The strategy for achieving this is to initiate and fund projects that make a significant contribution to the maintenance of biodiversity. The EWT seeks to achieve its mission by conducting a program of research, awareness, and conservation action. Many of the EWT's activities are executed by its Working Groups, which are the Blue Swallow WG, the Highlands Crane WG, the SA Crane WG, the Poison WG, the Raptor Conservation WG, the Vulture Study WG, the WBRC, the Carnivore Conservation WG, as well as the TRAFFIC office. The EWT is involved in a number of African countries, such as Moçambique, Namibia, Zimbabwe, Congo, and Malawi. There are 76 projects registered for 1996.

Genome Resource Banks (GRBs) represent a potentially powerful conservation tool and involve the systematic collection, storage, and use of biological material such as sperm, egg-cells, embryos, and other biological tissue. The WBRC has been working closely with members of PAAZAB as well as other

stakeholders, such as the National and Natal Parks Boards, Provincial reserves, game farmers, professional hunters, academia and others to develop the GRB for Africa. The WBRC recently moved into new headquarters at Pelindaba (Atomic Energy Corporation of SA), just outside Pretoria. Facilities and services include laboratories, offices, storerooms, shed (for parking mobile laboratories and a helicopter), liquid nitrogen supply, gamma-irradiation facility, hostel for students/visiting researchers, game camp (with animals), and the basic infrastructure for developing a game quarantine facility. This facility houses the present primary GRB repository while TAURUS will house the secondary repository.

All the activities of the WBRC are divided up into programs, such as the Gamete Rescue Program (rescue gametes from animals that have recently died from whatever institution), African buffalo breeding program, African rhino breeding program, and African felid breeding program.

Education, training, and capacity building form a cornerstone of the project. Networking, for the acquisition of biological material within Southern Africa and the sharing of information on an international basis, is paramount to the success of the project. The WBRC believes in the formation of partnerships on a national and international basis so as to operate in an efficient and productive way. The WBRC plans to develop satellite centers in the rest of Africa as the need and opportunities present themselves.

The WBRC now has a base with core personnel to develop the project further. The race is on to collect material as soon as possible from a number of species that are threatened with extinction. This project represents an insurance policy that is destined to play a role in saving from extinction a number of wildlife species. It is going to take a lot of support and energy to play this role and the WBRC would like to thank its supporters and sponsors for their very important role. They are: Atomic Energy Corporation, Mondi Recycling, Nestlé, Mazda, PIE Medical, Philips, VodaCom, Total, CryoLogic, Zeiss SA, Compaq, DHL, and Taurus.

For further information contact: Wildlife Breeding Research Center, Working Group of the Endangered Wildlife Trust, P.O. Box 582, Pretoria, 0001, South Africa; Tel/Fax: 012 3165840 (International: 27 12 3165840); Cel-tel: 082 9903533/4; e-mail: wbrc@global.co.za

*This report was submitted by Dr. Paul Bartels, Wildlife Breeding Research Center.*



## Invertebrate Working Group Report

Current zoo-based invertebrate species conservation programs, the majority of which have been developed through to the field establishment phase, were reviewed. It was agreed that the number and depth of these zoo-based conservation programs represent a significant and cost effective contribution towards species conservation.

The need to expand the invertebrate directory to include zoos, governmental conservation agencies, museums, universities, invertebrate societies, and (where appropriate) private individuals was discussed and agreed. One of the reasons for such a comprehensive directory is the relatively low number of zoo-based invertebrate people. It was also agreed that a comprehensive profile of all the current invertebrate conservation programs be produced to illustrate the extent of current activities and provide guideline material for future program work.

In addition to the above directory needs, it was agreed that a comprehensive survey of existing invertebrate facilities should be conducted for each region.

The group reviewed its progress in producing species management and related guideline materials. The production of such materials was agreed as being essential in realizing the group's remit. It was agreed that while a considerable amount of material has been produced, there is need to further develop both general and specific guideline materials to provide the zoo community with comprehensive guidelines on all aspects of invertebrate, care, exhibition, and conservation.

The need for ensuring the attendance at annual CBSG meetings of the regional invertebrate TAG chairs was agreed as being extremely important if we are to ensure adequate forum discussion and representation.

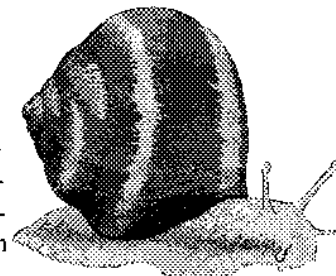
## Invertebrate Conservation Programs

The last year has seen some notable developments in the area of invertebrate conservation programs around the zoo world. Following is a brief resume of some of the main zoo-based conservation programs.

### **Partula Snail Program**

The overall population of Polynesian tree snails of the family Partulidae has increased in 1996, but there are mixed fortunes amongst the 35 captive taxa (representing at least 25 species, 12 of which are extinct in the wild). These are held in nine European and six North American collections, all members

of the Pacific Island Land Snail Group. Two species have been lost in captivity in 1995-96, *Partula arguta* and *P. turgida*; the last specimen of which died on the first day of 1996. However, several new taxa were collected from an expedition to Tahiti and the Marquesas Islands in autumn 1995 including two species that were previously thought to be extinct, *Partula affinis* and *P. clara*. The full taxonomies of the Marquesan snails is unclear and these taxa have not been kept in captivity before.



In addition to the above field survey and collection work, three species of captive-bred *Partula* have been released into a reserve built on Moorea for this purpose. The participating *Partula* collections have provided sufficient funding for two years monitoring to determine the viability of this conservation option. Extensive diet and husbandry trials are currently underway to enhance survivorship of the more fragile taxa. The *Partula* program has been formally recognized as a full EEP program to tie in with the SSP. This program remains the only international conservation program for an invertebrate species.

**British Field and Wart-biter Cricket Programs**

The UK-based Species Recovery programs for the field, *Gryllus campestris*, and wart-biter, *Decticus verrucivorus*, crickets have seen releases of several hundred wart-biter nymphs into a selected site in the south of England. Wild hatchings of wart-biter nymphs in the newly-established site have been confirmed. Survey work has confirmed the successful overwintering of last year's field cricket release stock, bringing the total of new wild colonies (established with zoo-bred crickets) to six.

### **British Field and Wart-biter Cricket Programs**

No further releases of the field cricket are being made this year because of the discovery of an infection in the captive stock during the pre-release screening procedure. The decision was taken to withhold further releases until these micro-organisms can be clarified as being naturally associated with the field cricket or, failing that, to evaluate if their presence constitutes sufficient risk to prevent the release of any infected stock.

**American Burying Beetle, *Nicrophorus americanus***

This program, involving the Roger Williams Park Zoo, is another program that has been developed to the site release stage. Progress over the last year has been focused on investigations aimed at improving the survivorship of the captive and wild populations.

### **Indian Invertebrate Conservation Workshops**

In association with Zoo Outreach Organization, the British Council, and British Airways, a series of five workshops were conducted in zoos across south India on the key issues involved in establishing invertebrate conservation programs in the Indian region. These workshops were extremely productive and it is hoped to conduct follow-up initiatives in the near future.

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*Invertebrates...*

The daunting task of developing the global invertebrate directory has seen some significant advances this year with a comprehensive survey of all EEP collections, museums, and universities within the European region. A similar effort is currently underway for the Australian region by Alan Yen.

**Awareness Raising and Guideline Materials**

The group has been active in this area over the last year and it has produced a number of general awareness-raising materials (with the help of British Airways Assisting Nature Conservation) in addition to more technical guidelines on the care and management of invertebrates and related conservation program work. For information, contact: 1) Invertebrate Working Group Chair, Paul Pearce-Kelly, Zoological Society of London, Regent's Park, London, NW1 4RY, UK, Tel/Fax: 0171 722 5390, E-mail: ajaybj@gn.apc.org; or 2) Co-chairs, Dr. Alan Yen, Invertebrate Survey Department, Museum of Victoria, 71 Victoria Crescent, Abbotsford, Victoria 3067, Australia, Tel: 03 419 5200, Fax: 03 416 0475, and Randy Morgan, Head Keeper, Insectarium, Cincinnati Zoo, 3400 Vine Street, Cincinnati, Ohio 45220, USA, Tel: 513 281 4701, Fax: 513 281 0634.

*This report was submitted by Paul Pearce-Kelly, Zoological Society of London and Invertebrate Working Group Chair.*

## Captive Reproduction and Reintroduction of the American Burying Beetle

**Natural History**

The American burying beetle, *Nicrophorus americanus*, is the largest native member of the family Silphidae. This beetle was listed as a federally-endangered species on 12 June 1989. At that time, the only known viable population occurred on Block Island in the state of Rhode Island.

Originally believed to have occurred in 35 states and three Canadian provinces, the American burying beetle suffered a substantial decline beginning sometime in the late 1800s. The cause of this decline, which appears to have started in the center of their former range, remains a mystery.

Intensive surveys in the west have since located populations in Oklahoma, Arkansas, Nebraska, South Dakota, Kansas, and Iowa. Remnant populations in Kansas and Iowa have just been discovered in the past year and their viability is unclear. In the east, Block Island remains the only naturally-occurring population while reintroduced populations occur on Pennikese and Nantucket Islands in the state of Massachusetts.

**Husbandry**

The husbandry of the American burying beetle has proven quite simple. We converted an old bathroom into a breeding and rearing room for this endangered species. The room measures about 3 m<sup>2</sup> and the temperature is maintained at between 68° F and 70° F year round. Lighting is provided by banks of fluorescent lamps which provide a 12-hour light cycle.

When not reproducing, the beetles are maintained in same-sex groups in clear plastic boxes. Initially, we kept three to five beetles per box, but due to aggression, we have reduced that number to two per box. Damp unbleached paper towels are placed in the box to provide humidity and a hiding spot. The boxes are spot cleaned daily and stripped approximately once a week. These same boxes are used to hibernate the beetles which is done in a modified refrigerator.

The adult beetles are fed primarily on mealworms. An adult will normally consume approximately one mealworm per day while newly-enclosed beetles will devour four to six per day. We are currently experimenting with feeding carrion to the adults in an attempt to more closely approximate what their diet in the wild would be.

**Reproduction**

American burying beetles are first bred three to four weeks after they eclose. A five-gallon black flower pot is filled one-half to two-thirds full of tightly-packed garden soil. The soil is moistened until it forms a ball when squeezed. Soil that does not compact well does not allow the beetles to prepare a brood chamber.

Approximately 100 g of carcass is thawed and placed in the center of the pot. The carcass can be various rodents, chicks, and fish having all been used with success. The size of the carrion is important though. Small carcasses (i.e., < 80 g) do not provide sufficient carrion for the beetles to produce a brood. Larger carcasses (i.e., > 180g) cannot be buried properly. Interestingly in some cases, beetles will bury a portion of the carcass and rear young while leaving the upper parts of the carcass above ground. The size of the carrion also affects the number of larvae reared. On smaller carcasses the parents will often cannibalize larvae to reduce the brood size.

Pairs are selected randomly, though we do make every attempt to prevent inbreeding, and they are placed in a pot which is then covered by a clear sheet of Plexiglas™. The pair will normally mate within a few moments of being placed together. Shortly after mating, the pair will begin working the carcass by first digging a hole beneath its head and slowly bringing it under ground. In 12-24 hours, the carcass will be completely buried in an oval brood chamber. Within the brood chamber, the pair strips the carcass of fur, feathers, or scales and pushes these waste materials to the top. Rolling the carcass in a ball, they coat it with oral and anal secretions which serve to retard decay and keep the carcass viable during the larval period.

The female lays eggs beneath or near the carcass within a few days to a week of burying it. The eggs hatch three to five days later and the adults often carry the first instar larvae to the carcass.

The mandibles of the young are too weak to tear off food and they will solicit feeding from the adults by rearing up and stroking the adult's mandibles. This behavior may persist throughout the larval stages. The larvae go through three instars in approximately five days.

At day ten, we dig up the brood chamber to count larvae and remove the adult male. The adult female remains with the larvae for an additional two to five days at which time the larvae wander. There is some evidence that the female may dig tunnels for the wandering larvae. Larvae begin to pupate within a day or two of wandering. Pupation generally lasts 45-60 days (average 51 days). The majority of beetles will eclose on the same day, although we have had some take as long as two days before an entire brood has eclosed.

### History at Roger Williams Park Zoo

In May of 1994, Michael Amaral, senior endangered species biologist with the U.S. Fish and Wildlife Service, invited us to participate in the American burying beetle recovery project. After much soul-searching and many calls to Andrea Kozol of Boston University (BU), we agreed with some trepidation. Only Andrea has consistently met with success in reproducing these animals. Indeed, Andrea provided the beetles for release onto Pennikese Island and the first 22 pairs of beetles to be released onto Nantucket Island. In early September, Andrea arrived with 40, two-week old beetles. These beetles had their origins from the wild population on Block Island. To obtain stock without having an undue influence on the wild population, pairs had been trapped and then provided with carrion in a secure site. Those pairs that produced large broods (> 15 larvae) had three to five larvae culled and taken to the lab at BU. Transported on hamburger, the larvae were nurtured for several days before they wandered and pupated.

Five pairs were initially set up, and all five pairs produced young. To our surprise, one pair initially buried their carcass but then brought it back to the surface. This event, though unexplained, provided us with the opportunity to watch the larvae develop and consume the carcass. We have seen this take place many times since then, and many pairs will simply prepare the carcass on the surface. That they do not bury does not seem to determine whether a pair will successfully produce larvae or not. Two additional pairs were set up a few days later and on day 10 we dug up all those that had buried. To our delight, six of the seven pairs produced larvae (range 6-30, average 14.5) and after removing the males, we sat back to watch. The larvae wandered within three days of being dug up and all we could do was wait. Fifty-one days later, the first beetles began to emerge and eventually there were 71 healthy first-generation beetles.

Our next several attempts were less successful. Only eight of the next 18 pairs set up produced larvae with only 47 beetles eclosing. As our first release date loomed ever closer, we decided to make several changes in our husbandry techniques. Bleached paper towels were replaced with unbleached ones. The fluorescent lights were switched from cool whites to vita-lites. We changed the type of soil three times. We also changed how we

set up the broods. In some cases we put the pairs together several days before giving them a carcass. In others we put the male in with a carcass and placed the female in several days later. One week after making these changes, we set up additional pairs. Twenty-one pairs were set up over the next three weeks in an attempt to provide at least 50 pairs for the first release in July of 1995.

We may never know what change was the most important, but from those 21 pairs, 159 larvae were produced with 130 beetles eclosing. Our initial joy was quickly tempered as again our pairs seemed to stop producing. Though we have tried many times since, we have not been able to trigger such mass reproduction again.

To date, we have set up 87 pairs of which 41 have successfully eclosed beetles. Four-hundred and thirty-one larvae have been counted with 337 beetles eclosing.

### Reintroduction

We have now participated in two releases of our captive-reared beetles. The first occurred on 17 July 1995, consisting of 121 captive-reared and 16 wild-caught beetles. The wild-caught beetles had been collected from Block Island and housed at Roger Williams Park Zoo for two weeks before the release. We placed 56 pairs and 25 single males in plastic deli containers, then packed them on ice in Styrofoam™ coolers. It had been an oppressive summer and temperatures on the day of release were again expected to soar. It would take nearly six hours to reach the release site, but by 4:30 p.m. all the beetles had successfully been released on carrion.

Each pair was set up with carrion in a shallow hole. A bucket was placed over the top of the hole to reduce the chance of crows finding the carrion. Each item of carrion had a pink flag attached by dental floss. This would allow easier location of the buried carcass 10 days later when they would be dug up. The beetles had notches placed in their elytra so that we could differentiate zoo-bred, Block Island captures, and wild Nantucket stocks.

The next day the beetles were checked to see about progress. Thirty-three pairs had buried their carcass and nine others had partially buried theirs. Six pairs had not buried but at least one beetle was still present. Four pairs had abandoned the carcass and two carcasses had been taken by crows. Many of the solitary males, which had also been set up with carrion, had begun to bury and it was hoped that they would be able to attract wild mates. On the 27th, Michael and Andrea returned to Nantucket to dig up some of the broods and count larvae. Twenty-nine broods were dug up and 17 of these had larvae (average 14) while eight were still actively working the carcass and four had failed. On two of the larger carcasses, they found both third instar larvae and eggs, suggesting that the pair was beginning a second brood. If we use these numbers as averages, a total of 33 broods should have been successful with at least 462 larvae being produced. Not too surprisingly, the beetles transferred from Block Island had larger broods than the zoo-bred pairs. All the wild pairs that were dug up were successful.

Our second release took place on 15 July 1996. Two months



*Beetle...*

earlier, 70 larvae had buried but only 33 beetles had eclosed. Thus, we were only able to provide 19 beetles for this release. As the Block Island population seemed to be decreasing, no adult beetles were transferred. The 12 male and seven female beetles had eclosed two weeks earlier and they were one week younger than preferred. After much discussion, we decided to proceed with the release. These pairs were set up in the same way as preceding years, with the addition of wire mesh placed over the holes to further discourage the crows. Due to their young age, the beetles were not disturbed until 27 July. To our surprise, all seven pairs produced larvae. In two cases, the females had abandoned the initial males but had taken up with the extra zoo males. One zoo-bred male had successfully attracted a wild female. From these eight pairs, 113 larvae had been produced (average 14).

We will never know how many of the 351 larvae emerged as adults. We will also never know how many failed pairs would be able to attract different mates and produce young. We know that beetles continue to survive on Pennikese Island four years after the last release and on Nantucket Island after three years of releases. Whether these populations will become self-sustaining is the primary question. At least two more years of releases are planned for Nantucket, and it is hoped that a mainland site in the East will also be found for releases.

### Conclusion

The Roger Williams Park Zoo has met with some success in this venture. We have provided 140 beetles, some of which were seven generations removed from the wild, for release. Seventy percent of our pairs produced young, although only 47% successfully eclosed beetles. Seventy-eight percent of the larvae produced eclosed. A total of 337 beetles have been produced from the original 40 beetles.

Of course, there have been disappointments. Why pairs fail remains a mystery. Small brood sizes and poor treatment of the carrion have plagued us from the start. Perhaps the biggest disappointment was when eight pairs of wild-caught beetles failed to reproduce. Speculation is that since they were collected in late September they may have already entered into some pre-hibernation mode and they were not reproductive at the time.

We currently have 28 wild-caught larvae. These larvae pupated on 12 July 1996 and they should eclose on or around 1 September. These will provide the brood stock for the next set of releases. We plan to continue making modifications to our husbandry protocol to get more consistent reproduction from the pairs. Changes will include subjecting pairs to varying weather conditions, such as placing some pairs outside in spring and allowing them to reproduce in soil-filled stainless steel bank cages. In addition, we will try giving more carrion items to the adults as a food source and reducing the amount of mealworms being fed. Other changes will include providing sod-filled buckets for nesting, since many wild pairs nest beneath the roots of various plants and perhaps the roots help to hold the brood

chamber together. We will also allow some males to attract females by giving them several females from which to choose.

We have enjoyed the support of the U.S. Fish and Wildlife Service, the Rhode Island Division of Fish and Wildlife, and the Massachusetts Division of Fish and Wildlife. Their help, along with that provided by Andrea Kozol and the Cincinnati Zoo, have contributed to the success we achieved thus far.

*This report was submitted by David Wetzel, Roger Williams Park Zoo.*

## Impact of Falconers on the Houbara Bustard

Bustards are medium-sized to large terrestrial birds of arid or scrub plains in the Old World. They include both the heaviest of all flying birds, up to 15 kg, such as the male great bustard, *Otis tarda*, and the Kori bustard, *Ardeotis kori*. Other bustard species are scarcely larger than a partridge, like the little bustard *Tetra tetra*.

Bustards typically have rather short bills, long slender necks, and stout bodies with short tails, which are supported on fairly long legs with only three toes on each foot. The scales on the legs are hexagonal. Bustards lack both a crop and oil glands. Their bodies are covered with dense, friable, powder-down. Males are generally larger than females, especially in the larger species, and they have more showy plumage. The courting behavior involves an attractive display of the plumage, along with flight figures, leaps, or resounding calls.

The first record of human association with bustards dates from 4,000 to 6,000 BC in the form of a simple outline drawing in the Tajo Segura cave in southern Spain. The drawing is unmistakably that of a great bustard and an early hunter. Yet our knowledge of the biology of the bustards as a group remains astonishingly meager. This statement still holds true for the Houbara bustard.

The bustard family (Otididae) contains eight genera, 22 species, and 47 subspecies exclusively distributed in the Old World. Taxonomically, the bustards are placed in the order of Gruiformes, together with cranes (Gruidae) and rails (Rallidae). Classification is based on similarities in appearance and behavior. Several DNA-DNA hybridization studies have also shown a close relationship of bustards to cranes (Gruidae). However, differences in certain anatomical features (like the presence of hexagonal tarsal scales of bustards compared with the transverse scales of the legs of cranes, absence of oil glands, and completely different egg-white proteins) may indicate a weaker relationship of bustards to Gruiformes.

Falconry (hawking) is a form of hunting using a bird of prey to take wild, furred or feathered quarry in its natural state and habitats. It is an ancient sport. It is probably one of the very few,



if not the only, form of hunting which has changed little in its methods and techniques. For many people, falconry is considered to be a form of art.

Falconry has traditionally been associated with royalty and privileged classes and it is known to be "the sport of kings." The origin of falconry is completely unknown, but most references suggest that it may be from the Central Asian plateau which is bounded by the Altai mountains to the east and by the Aral Sea to the south. Today, this area encompasses China which has a high natural concentration of raptor species suitable for falconing, such as gyrfalcons, sakers, lanners, peregrine falcons, and eagles.

Falconry is an Arab heritage. For many centuries, the Houbara bustard (*Chlamydotis undulata macqueenii*) has been an integral part of the Arabian desert landscape. It is the prime quarry of traditional Arab hunting. Many poems have been written describing the courage and power of the Houbara in defending itself against falcons.

Houbara have always been very special to the Arabs and, in particular, to the Bedouin. Houbara meat is very tasty. When cooked with rice, it is called *Houbara kibash*. To the Arab desert man, this is considered to be a food that is second to none. Many old-timers believe that Houbara meat is an aphrodisiac.

The Houbara population has declined sharply over the last two decades in Saudi Arabia. A study was carried out in the eastern and northeastern areas of the Eastern Province of Saudi Arabia where wintering Houbara were believed to arrive first on their migratory route. The study showed that people, including falconers, were in agreement to preserve the institution of falconry for generations to come. However, this can only be achieved by protecting the Houbara Bustard population. Also, the study showed that education was essential for any wildlife conservation project. The author, based on these results, presented several scenarios for the impact of falconers on the Houbara population. An estimate was made for winter populations and hunted populations. Pearson's correlation coefficient was applied to determine the relation between the number of Houbara killed, number of falcons used, number of vehicles used, and the number of days spent hunting.

*This report was submitted by Dr. Abdul-Wahed Al-Saihati, Saihati Desert Wildlife, Saudi Arabia.*

## Behavioral Assessment and Management Working Group

The Behavioral Assessment and Management Working Group agreed by consensus with the following statements:

1) Animal behavior research and management programs in zoos should be given the maximum amount of support in order to promote natural behavior, optimal reproduction, and the

provision of environments that take into consideration the differing psychological needs of individual animals.

2) The international zoo community should use available behavioral expertise and previous experience to improve exhibit design and animal management practices, including environmental enrichment, to solve reproductive problems and to promote natural species-specific behavior.

3) An independent behaviorist/ethologist should be brought in as an expert to be involved in all future PHVAs organized by CBSG.

4) Interdisciplinary communication and cooperation, including collaboration with research institutes and universities, should be improved.

The following priorities were identified for action:

1) Standardize and simplify behavior data collection and analysis, including development of methods to validate results of husbandry research and generate hypotheses for testing.

*Action Step:* Bengt Holst and Devra Kleiman will pursue funding for a European workshop to modify behavioral techniques currently used by the Methods of Behavioral Assessment (MBA) Project and initiate research to validate new tools. Holst and Kleiman will promote the project at the EEP meeting in June 1997. Kathy Carlstead, Christian Schmidt, Jeremy Mallinson, Frands Hjortd-Carlson and Angela Glatston to provide major input and support.

2) Develop an international network of behavioral experts for use by CBSG and all regional zoo associations as consultants for *in situ* and *ex situ* conservation activities.

*Action Step:* Kathy Carlstead will provide the AZA BAG Directory to Angela Glatston who will develop a European database and who will contact the Coordinator of the CAUZ database for the CAUZ list of behaviorists. Angela Glatston will merge databases and make them available. We will seek to include lists of experts from other regions.

3) Produce a key for identifying behavioral problems of zoo taxa.

*Action Step:* Frands Hjortd-Carlson, Bengt Holst, and Kathy Carlstead (through the AZA BHAG) will develop preliminary keys to be evaluated and edited at the European workshop in 1997.

4) Provide training to zoo staff in the importance of understanding behavior for animal management and in simple techniques of objective observation and description.

*Action Step:* Bruce Read and Cheryl Asa to determine whether AZA will permit behavior materials within the Conservation Academy Animal Management course to be modified and distributed for use in other regions. They will then provide these materials to different regions for modification for local use; initial distribution will be to Bengt Holst for Europe.

5) Use TAGs to set priorities for taxa for behavioral study.

*Action Step:* Four taxa were chosen for initial research, due either to pressing needs or to validate initial MBA results with a different population of animals. Christian Schmidt and Waltraut Zimmermann will propose at the White Oak okapi meeting (Aug. 1996) that behavioral assessment of okapis be accomplished to

*Behavior...*

determine the basis for differential reproductive success in Europe versus North America. At the European workshop (see Action Step no. 1), refined behavioral assessment techniques will be developed for black rhino and hornbills, the focus of initial MBA studies. A comparable study will be initiated on white rhinos in Europe.

*This report was submitted by Kathy Carlstead, Bengt Holst, and Devra Kleiman.*

## Confiscation Working Group Report

It is acknowledged by this working group that there exist certain dedicated professionals in the private sector who propagate non-domestic animals and in so doing, contribute to conservation efforts. This group also believes that overall, the ownership of wild-caught wildlife by private individuals may be detrimental to the individual animal and also can contribute to the depletion of wild populations by further perpetuating the pet trade in non-domestic species. Because of these observations, this working group recommends that:

1) Regional zoo bodies should strongly encourage their member institutions to work with their local governments, policy making bodies, and concerned stake holders in the development and implementation of appropriate legislation that affect confiscated wildlife, specifically those laws which prevent the taking of animals from the wild for the pet trade.

2) Regional zoo bodies should strongly encourage their member institutions and working groups to aggressively educate the public against the owning of non-domestic animals. Liaisons should be formed with local veterinarians, humane organizations, and local pet stores to accomplish this goal and distribute educational materials. Commercial companies involved in the production of pet foods and pet products should be approached as partners in these educational efforts. Brochures and related educational materials, which describe the inappropriateness of non-domestic animals as pets, should be collected and distributed via the Internet for global use. The AZA Public Education Committee should join with other regional education groups to spearhead this project.

3) From a biological standpoint, zoos should be discouraged from functioning as repositories for confiscated wildlife for the following reasons: a) confiscated acquisitions may pose health risks to collection animals; b) facilities to house confiscated animals are limited; c) financial resources are diverted from existing programs; d) genetic value of confiscated animals may be low or unknown; and e) accepting confiscated animals

(from the public) gives the impression that zoos are an easy outlet for the disposal of unwanted animals

4) Regional zoo bodies should develop consistent acquisition and disposition policies to ensure that their member institutions do not contribute to the perpetuation of the non-domestic pet trade.

5) Regional zoo bodies, recognizing the premise of the IUCN policy on the Wise Use of Natural Resources, should strongly encourage their member institutions to develop conservation programs, such as ecotourism or nest protection, that will provide financial or social incentives to protect wildlife.

There are several issues related to confiscated animals that require further discussion, such as wildlife rescue operations and centers, policy statement on euthanasia of confiscated animals, and exotic pet ownership.

It is suggested that these guidelines be communicated directly to regional zoo bodies.

## CAMP Activities in India

### Plants CAMP

In 1995, the first CAMP workshop for Rare Species of Medicinal Plants of Southern India was held in Bangalore. Dr. Seal led the workshop which was hosted and fully funded by the Foundation for Revitalization of Local Health Traditions (FRLHT) who contracted Zoo Outreach Organization/CBSG, India to organize and facilitate the workshop. British Airways Assisting Conservation contributed Dr. Seal's flight. In this workshop, 36 species of medicinal plants were categorized according to the new IUCN Red List criteria.

Species with deficient data were carried over to a second CAMP held in Bangalore, India in February 1996 and hosted and fully funded by FRLHT. This workshop was again organized and facilitated by Zoo Outreach Organization/CBSG, India but led this year by Dr. Mike Maunder of Kew Gardens. In addition to four species carried over from the last CAMP, another 40 species were selected on the basis of two criteria: inclusion in the Indian Red Data Book for Plants and their commercial demand. Some species were included because of perceived threat to them by some botanists.

Participants of CAMP II included primarily field botanists, university and research institute personnel, local health practitioners, and other NGOs including FRLHT and CBSG, India.

Of the 44 species considered, 14 were endemic to the region; 27 were non-endemic native species extending throughout India to Southeast Asia or Africa; and two taxa have been classified as "exotic" species although they become naturalized in this region. One species could not be evaluated because of confusion over its taxonomic status. The three naturalized taxa were not evaluated. All of the 14 endemics were categorized as Critically Endangered (4); Endangered (3); and Vulnerable (5). Two endemics

were categorized as Extinct since all surveys conducted over the last eight years have failed to locate individuals.

The non-endemic native species were all classified according to the IUCN categories at the regional level. All but one of the 27 species were categorized as Data Deficient at the global level. At the regional level, two were classified as Endangered, 12 Vulnerable, six Near Threatened, six Least Concern, and one Data Deficient.

There were also small working groups which discussed three issues: 1) follow-up actions to be taken after CAMP workshops to enhance their effectiveness; 2) design of a field data sheet for field botanists based on information needs of CAMP workshops; and 3) links with commercial trade, its development and use.

In addition, the following innovations were added to this CAMP: 1) participants of CAMP II-selected species to be covered in CAMP III to be held in January 1997; 27 species were selected in the session; 2) participants of CAMP II made commitments to adopt certain species for follow up from CAMPs I and II as well as to collect information for CAMP II; commitments were made both by individuals and institutions to survey and research from one to four species which had been found to be Data Deficient or otherwise in need of attention from CAMPs I and II; and 3) recirculation of CAMP reports and literature should be done as a regular part of the CAMP follow-up for agencies whose officials are frequently transferred so that there can be continuous follow-up.

At CAMP III, the major species which remain from the list of 300 originally selected for prioritization by FRLHT will be addressed and this will be the last CAMP for this particular series. We will consider that all the medicinal plants of southern India have been through the first CAMP iteration. We have also invited Kevin Johnson of Taronga Zoo, who has developed a computer program for entering CAMP data, to refine his method for plants as well as to enter all three CAMP data sets into the CAMP Data Entry Program.

### **Biodiversity Conservation Prioritization Project**

Immediately following CAMP III, we will proceed to Lucknow where there is a major research center for plants. We will begin a series of eight CAMP workshops throughout the next eight months for most animal groups of India. For plants, we will try and cover the major medicinal plants of the northern, eastern, and western regions. This will make a package of all the medicinal plants of India.

Under the Biodiversity Conservation Prioritization Project (BCCP), the Zoo Outreach Organization/CBSG, India has been given a contract by WWF, India, USAID, and the Nature Conservancy to design, plan, organize, and conduct the CAMP workshops. The BCPP has been organized following the Rio Conference in which signatories to the Rio Convention pledged to prioritize their species and sites and develop strategies for biodiversity conservation.

The animal groups to be covered are large mammals (100 species), small mammals (100 species), reptiles (450 species),

amphibians (>200 species), invertebrates, fish, and corals. Birds will not be covered because a project to prioritize birds of India is already underway by a local research institute in collaboration with Birdlife International.

This project represents a tremendous coup for the CAMP process. It was not even fully understood that CBSG or CBSG, India had anything to do with CAMPs when this decision was taken and it is a tremendous vote of confidence in the CAMP process. The CBSG, India was selected as the only institution in India to have expertise in conducting CAMPs. It is to be an in-country exercise with input from Kevin Johnson and occasional observers who will very subtly assist with facilitation.

The BCPP CAMP workshops are a tremendous challenge. Because of the vast number of species to be covered and the relatively small budget which has been allocated (US\$40,000), it has been necessary to modify the process somewhat. Instead of inviting individual species experts, this will have to be done more on an institutional basis. We are inviting all the governmental and nongovernmental scientific research institutes to send one or two representatives to the CAMP. They will be responsible for insuring species information for persons in their institution who have studied particular species.

We will also collect information on Taxon Data sheets through the post. This is not ideal, but it is the only way to cover the target. At worst, we will have made a respectable "first cut," taught a great many people about the CAMP process, and identified species which need further assessment and study on a regional basis.

Many innovations in the process will have to be made to cover the vast number of species and also to insure cooperation by institutions and governments at the state and local level all over India. This is another reason for structuring the CAMPs as described above. The process must be seen to be non-prejudicial to any institution or area. Also, it is desired by USAID that innovative strategies for use by other continents and countries be developed. We feel that the strategies developed will indeed be useful for other countries for assessing their entire inventory of biodiversity.

After these CAMPs, we will conduct a full facilitator training course for selected individuals who emerge at the different workshops and empower them to conduct further CAMPs in a more detailed and systematic manner at the sub-regional and local level.

### **Sri Lanka**

Another interesting CAMP development was that Sri Lanka requested a half-day seminar on the CAMP process which was given by Sanjay Molur, CBSG, India Program Officer. The herpetile conservationists of Sri Lanka have requested a CAMP workshop to be held in Sri Lanka for herpetiles and they are investigating the possibility of conducting further CAMPs for other animal groups.

*Submitted by Sally Walker, Zoo Outreach Organization and Coordinator for CBSG, India.*



## What CBSG Can Do for Zoos

The CBSG has been involved in the planning of recovery programs for some of the most endangered animal and plant species on earth and facilitating more than 100 planning processes in more than 45 countries. These processes, based on sound science, local expertise, and the best available information, use a "bottom up" approach to conservation. The CBSG works directly with local managers, agencies, governments, and organizations with the responsibility of ensuring the future of their endangered species.

The CBSG's strength is in building communication and partnerships among all parties interested in a rare species and its habitat. One aspect of this strength is in providing a link between *in situ* and *ex situ* conservation efforts. We work closely not only with zoos but with wildlife and conservation agencies, the private sector, and other organizations committed to species conservation by habitat preservation and intensive species management in the wild as well as sometimes through captive breeding.

Zoos and aquariums are one of the most important constituencies for CBSG and its work. The zoo community has nurtured CBSG since the early days by providing opportunities, financial support, and believing in our mission and that our programs and work are worthwhile contributions to the conservation of the rapidly disappearing biodiversity on this planet earth.

Zoos, for the most part, are responsible for the funding base that allows us to maintain a small office with five paid staff, to support the development of new tools and processes, and to continue to expand the CBSG network. In addition, zoos provide anywhere from 35-75% annually of the actual direct support for our workshop processes in addition to the core support contributions. This is not something that we take for granted and for which, in fact, we are exponentially grateful.

I'd like to note a few of the workshops that have taken place this year and to acknowledge the direct workshop support that we have received. These examples are from 1996, but it is important to acknowledge how important this kind of support has been over the years in allowing us to do more workshops than our core budget would normally allow.

In January, a Mexican Lagomorph CAMP and PHVA for the highly-endangered volcano rabbit was generously supported by the St. Louis Zoo. In February, a PHVA was conducted for the Namibian populations of cheetah and lion, sponsored by British Airways, White Oak Conservation Center, the Columbus Zoo, the National Zoological Park's NOAHS Center, the Philadelphia Zoo, the Fort Worth Zoo, Zoo Atlanta, the Oklahoma City Zoo, the Rio Grande Zoo, the Houston Zoo, Caldwell Zoo, Franklin Park Zoo, Binder Park Zoo, and the Nashville Zoo.

A PHVA for the Orinoco crocodile was held in March, generously supported by the Cleveland Metroparks Zoo. The Cleveland Zoo has a great interest in working in Venezuela, and this workshop allowed the expansion of their contacts in Venezu-

ela and hopefully it will lead to additional collaborative programs.

In July, PHVAs for the babirusa and anoa were conducted in Indonesia supported by the St. Louis Zoo, Jersey Wildlife Preservation Trust, Copenhagen Zoo, Howletts Wild Animal Park, Port Lympne Wildlife Park, and the Antwerp Zoo. Early in August, PHVAs were conducted in Australia on the legless lizard and the Spotted Tree frog, sponsored by the Melbourne Zoo and Taronga Zoo.

Upcoming workshops include a Penguin CAMP workshop generously supported by Sea World and the New England Aquarium. Sea World has been an important partner for us and through the efforts of Brad Andrews has provided support of at least one major marine workshop per year for the past four years.

African Safari and AZCARM (the Mexican zoo association) also have made a commitment for workshops on cactus of the state of Puebla in Mexico and endemic pinniped species.

Funds have also been committed for a Felid Masterplanning process in Mesoamerica with Yolanda Matamoros. Funds for this effort have been committed by the Zoological Society of San Diego, the Columbus Zoo, Oklahoma City Zoo, and the Fort Worth Zoo. Additionally, the USFWS has committed funds to support the participation of Mesoamericans in this process.

The Columbus Zoo, an institution with a tremendous commitment to field conservation programs all over the world, is generously supporting the giant panda masterplanning workshop scheduled in December in China.

### Steps in Developing Workshop Support

The steps in developing workshop support are: 1) CBSG is contacted by an in-country organizer(s) with a formal letter of invitation; 2) workshop costs and needed support is determined; 3) institutions with a known interest in the species are contacted to determine their interest in supporting the workshop; and 4) support is received from interested institutions. An individual zoo may receive multiple letters inviting support for a workshop. This is not meant to be continual haranguing for money but it is to provide an opportunity for zoos to get involved when there is an interest.

Zoos can benefit tremendously by supporting CBSG workshops. The CBSG makes the initial contact with local organizers and biologists. Personnel from supporting zoos are then invited to attend the workshop. Full acknowledgment of a zoo's support is given both at the workshop and in all printed materials produced.

There are a number of advantages in terms of local connections that can develop at workshops. Zoo personnel are in direct contact with local biologists and managers at the workshop and see first-hand the steps taken in developing the recommendations for action made by workshop participants.

Zoo staff can make first-hand determination of projects of

interest and meet with local participants who can implement them. Important connections also are made with local wildlife agencies or government representatives attending the meeting.

Many zoos find great value in having their name linked not only to workshops but to *in situ* projects that may evolve from workshops or from other means. There is a long list of zoos with direct involvement with *in situ* work that didn't exist four to five years ago; the CBSG has facilitated some of those efforts but certainly not all. Involvement with the CBSG is not the only way to make these links, but it is a conduit that can help zoos develop the necessary connections for important *in situ* conservation projects.

There are many opportunities for support, involvement, and connections coming up. The CBSG will help institutions in whatever way we can whenever the needs expressed by countries and the interests of individual institutions mesh.

*This report was submitted by Dr. Susie Ellis, Senior Program Officer, CBSG.*

## CBSG Regional Network Draft Guidelines

### Networks for Catalytic Change

Arming people with the recovery tools developed by the Conservation Breeding Specialist Group (CBSG) in regions of high biodiversity to save species and populations is the major goal of the CBSG Regional Network movement. The strategy is to use the CBSG and its process workshops as a device for regional networking to create a national or regional interactive management team from individuals of diverse, yet related, disciplines.

The urgency created by increasing degradation and fragmentation of habitat and the resulting decline in species and populations requires concerted effort to build teams of conservation specialists which can identify and salvage such populations before they are doomed. Both identification and recovery efforts require the skills of multiple specialists from a variety of disciplines (experts) and interests (enthusiasts). Together, these comprise the stakeholders which are likely to have the degree of commitment to save species and populations and their habitats.

Experts and enthusiasts are often fragmented, either by lack of knowledge of one another or by unproductive behavior patterns. It is crucial to bring these groups together, first to assess the status of species and populations and then to develop management strategies for declining animal groups. A team effort by all stakeholders can determine the continuance or recovery of

endangered species and their deteriorating habitats. To bring this about, catalytic change is required in human behavior for which networking within given regions is crucial.

### Key to Forming CBSG Regional Networks

The key to forming networks for catalytic change is to identify conservation and related subject area networks or pieces of networks (both functioning and inert) already in place, connect, and activate them. These networks or conservation and related subject area networks are the skeletal system of potentially vital regional or national conservation networks. The strategy is to build a team, starting with activists and stakeholders in the conservation community and then expand it. "Profiling" of individuals and organizations will help in targeting the most potentially effective ones. Profiling and "targeting" is done primarily so that these individuals, organizations, and agencies can recognize themselves and gain the confidence and validation to form a CBSG Regional Network.

Bringing conservationists together into a CBSG Regional Network, as opposed to another network form, has multiple advantages. Because they need to work together to bring about change, the CBSG tools and processes provide the means to encourage good working relations. Moreover, the greater CBSG Network provides cutting-edge expertise in conservation biology.

### Emergence of Networks

Several CBSG Regional Networks in high biodiversity areas have emerged as a result of local need and initiative. Through these networks, global and regional conservation organizations, agencies, and individuals of all fields and disciplines are working together to share experience and expertise in a variety of conventional and non-traditional partnerships.

The role of Regional CBSG Networks in assisting local agencies responsible for saving species and associated habitats will increase by promoting the interface between *in-situ* and *ex situ* conservation and enhancing the efficacy and efficiency of interactive management (or scientifically managed meta-populations) thereby fulfilling national responsibilities to the Convention of Biological Diversity.

While it is of the utmost importance that the initiative to create such networks comes from within the country, an extra "push" may be required. It has proved to be extremely challenging to get people to voluntarily associate and become active in a positive and constructive manner to address crucial conservation issues. Therefore, some "engineering" may be required, again from within the community. Regional Networks are for countries and regions that *want* them as well as *need* them. The "engineer" should have contacts outside to provide material for fuel, however. The Guidelines below represent the combined experience and ideas of network catalysts from six countries or regions which already have CBSG Regional Networks in place.

### Guidelines for Emerging CBSG Regional Networks

The reasons for establishing CBSG Regional Networks are

*Networks...*

to establish a regional conservation identity, to provide framework for arming or empowering people in areas of high biodiversity, to have the mission of CBSG carried out more effectively and efficiently, to promote more local involvement, to provide an atmosphere for different disciplines to work together at the local level, to organize CBSG process and training workshops more effectively, to facilitate the implementation of recommendations of CBSG process workshops, to increase ownership of processes, to empower potential users of CBSG process workshops, CBSG tools and training, and to allow CBSG main office and staff to devote their entire energy to establishing tools and training in new areas where rapid and effective conservation action is required.

**Efficacy of CBSG Roles**

Considerable expertise and experience exists within the current CBSG Network of about 7,000 people worldwide. This expertise and the potential for further development of it needs to be promoted. The currently active networks (India, Indonesia, Mesoamerica, Mexico) will serve as models, making their experience available for emerging networks (Egypt, Saudi, Southern Africa, Japan, China).

Members of CBSG in all countries and regions (even developed countries) where there is not an established network working specifically for that region also may benefit by undertaking a review of their effectiveness. If drawing together the appropriate agencies, organizations, and individuals for conservation action is not taking place at a level which insures rapid and appropriate conservation action, then a more structured national or regional approach may be required.

**Elements of a CBSG Regional Network**

A CBSG Regional Network is likely to need the following elements: 1) a host or home; 2) a partner or advocate; and 3) a sponsor or funding agency.

**Principles and Basic Characteristics**

The CBSG has a set of principles and characteristics which make it quite unique and a CBSG Regional Network wish to aspire to these. Beyond this, the personality of the satellite should be allowed to evolve in response to the political, cultural, and social environment of the region. Some of these qualities which define the CBSG operational style include flexibility, importance given individual effort, catalysts, innovation, multiple approaches, commitment, integrated unity and fellowship, non-dictatorial, flat organization structure, objectivity, political neutrality, vision, need based but desire oriented, expert and enthusiastic, sense of responsibility, and network approach.

**Guidelines for Network Engineering**

In starting regional satellite CBSG networks, it is not desirable or possible to give very specific instructions. Loose guidelines can be suggested because it is crucial that each CBSG

Regional Network reflect the needs and conditions of its own region. The following profiles are some qualities of host organizations, activists, and partners which have worked for established CBSG Regional Networks and which may be useful in forming effective Regional Networks in future.

It was useful to define what is meant by host (or home), partner (or advisor), and sponsor (donor). The host (for providing infrastructure) should be the country of origin of the Regional Network. The partner (advisory/moral support) should be familiar with CBSG and it can be another region or country. The sponsor (financially supportive) can be anywhere and any ethically compatible individual, organization, institution, or agency which could sponsor or donate communications, publications, staff, workshop expenses, or travel.

**Profile of Ideal Host Organization**

The ideal host organization should be autonomous or have some degree of flexibility, have infrastructure in place (office, communications, some equipment), have paid staff (with time, energy, and interest for additional activity), be in related sphere of activity/interest, be located in country or region of network, have respect of colleagues from broad range of disciplines, have reputation for commitment and clarity of motives, have compatibility of basis principles and objectives, have direct involvement in some aspect of conservation, be small organization with a flat heirarchy and flexibility of action, have scientific orientation, have capacity for objectivity, have capacity for immediate action, have capacity for providing communication both regionally and internationally, and have the capacity for supporting the Network or finding support from other funding agencies.

Examples of a host organization would be zoo associations (regional or national), professional associations, non-governmental organizations (conservation), environment department of synpathetic business/industry, university or college, or autonomous semi-governmental organization

**Profile of Image or Presence**

It is desirable that the CBSG Regional Network be recognizable as a clone of the CBSG parent organization but otherwise have its own regional identity.

A modification of the CBSG logo using the region's endangered species is recommended. Aesthetics should be considered as well as maintaining the elongated "C" for identifying with the main CBSG office.

In countries where the language is not English, the acronym "CBSG" may be preserved in the logo but the translation should be included in the local language. It is essential that the name of the country or region be accentuated in the logo, e.g., CBSG, India; CBSG, Mexico; CBSG, MesoAmerica.

**Profile of Organization**

It may be desirable for the convener to avoid a chairperson role and attempt to drive the Network by a series of communications to a Coordinating Committee. The convener should be personally and professionally autonomous, have high interest, be

innovative and self-motivated, and self-supporting, e.g., retired individuals, professionals with time to spare, influential personalities.

The coordinating committee may consist of conservation leaders that everyone recognizes. The convenor may copy everything to them and wait for disagreement. If there is none, the convenor might proceed. The coordinating committee could be existing CBSG members in the region or country.

The membership can be very open in regional networks. Completely unrelated, but interested, persons can be considered as "Friends of CBSG." Members can be from the conservation community in general such as government personnel (wildlife, botanical, zoological, natural resources), universities and research institute personnel, related professional communities (veterinarians, biologists, foresters, and non-traditional partners or stakeholders in conservation).

The organization can follow the triennium method or other, more convenient method (e.g., CBSG, India adopted a five-year renewal method). Communications can be by phone, fax, post, publications, CBSG documents, technical documents, and regional meetings.

Partners should: 1) be familiar with CBSG and understand the dynamics and politics of conservation movement; 2) should make a concerted effort to avoid imposing or advising a very structured approach; and 3) avoid "over-giving" so that the regional network will find ways to stand on its own.

Partners might provide 1) technical materials to be used by the network for its members; 2) appropriate contacts for involving other professional institutions, agencies, and organizations for supplying materials, funding, equipment, expertise, and other assistance; 3) facilitation of partnerships between zoos and regional network offices; and 4) assistance in establishing collaborative strategies between partners through regional networks.

Sponsors do not have to be connected to the conservation community. Their function is to provide funds or in-kind donations, sponsor workshops, or provide travel. They should not attempt to influence or advise the network members.

Tools and training should be provided in the CBSG philosophy, processes, activities, and recovery of small populations. The mission and basic objectives of CBSG Satellites would be the same as CBSG/SSC, but they should be tuned to the needs of the region.

## CBSG Mesoamerican Network

This network started just a year ago, suggested by Dr. Ulysses Seal. It is functioning together with AMAZOO, the Mesoamerican Zoo Organization. Financial support is from AMAZOO and FUNDAZOO (the foundation that administrates Simon Bolivar Zoo, Costa Rica). Its logo will have the same animals as the logo for AMAZOO. We are waiting to receive a

drawing of the coroloro, the Cuban national bird, which is going to be incorporated to represent Caribbean fauna. The structure will be the same as AMAZOO. Stakeholders are being identified. Members of AMAZOO will be invited to CBSG activities. In the near future, a part of the AMAZOO Newsletter will be dedicated to CBSG.



The network has developed the following activities: 1) Costa Rican endemic vertebrates and butterflies CAMP workshop, San Jose, Costa Rica, 1994; 2) *Saimiri oerstedii* PHVA workshop, San Jose, Costa Rica, 1994; 3) *Saimiri oerstedii* PHVA workshop, Quepos, Costa Rica, 1995; and 4) Cuban endemics CAMP workshop, La Habana, Cuba, 1996.

At this time, CBSG Mesoamerica is starting to work in the region. We have to show how we work and obtain the confidence of governmental offices, NGOs, and other organizations before we can do more.

The IUCN Regional Office has some conflicts with scientists and governments in the region. Since CBSG is also a part of IUCN, this sometimes works against our interests.

*This report was submitted by Yolanda Matamoros, Director of FUNDAZOO and Director, Simon Bolivar Zoo.*

## CBSG, Mexico

The CBSG, Mexico held two meetings to follow up on the recommendations derived from the CAMP and PHVA workshops held on Mexican primates and felids. The CBSG, Mexico prepared a manual on the husbandry on Mexican primates to be distributed to all Mexican zoos and it is preparing educational material on the pet trade as a threat to Mexican primates. This is to be used by all Mexican zoos and other environmental education institutions. Several meetings in preparation for a CAMP workshop on the cactus and marine mammals of Mexico were also held. The CBSG, Mexico edited and distributed the CBSG, Mexico Newsletter as well as created a folder that explains the mission, objectives, and activities of CBSG, Mexico, to be distributed to NGOs, government offices, and zoos with the intention of interesting more people in joining the efforts of CBSG, Mexico.

*This report was submitted by Amy Camacho, Director, African Safari and Coordinator of CBSG, Mexico.*



## CBSG-Indonesia Program

The Conservation Breeding Specialist Group (CBSG) has a good reputation as a leader in species conservation in Southeast Asia, particularly in Indonesia. The Population and Habitat Viability Assessment (PHVA) is one of the "tools" for scientists and university researchers, the Indonesian Research Center (LIPI), local forestry departments, zoos, conservation agencies, and NGOs. The PHVA serves as an extremely useful scientific approach to conservation of endangered species. Therefore, Indonesians are willing to learn the process better, and they will apply it for more endemic species in need of this assessment.

Taman Safari Indonesia (TSI) is the center of CBSG-Indonesia. After being introduced to CBSG in the late 1980's, the CBSG-Indonesia Program has enthusiastically endorsed this process. The additional endorsement of the local conservation authority, the Directorate for Forest Protection and Nature Conservation (PHPA), has led to CBSG's ability to regularly and consistently assist in the development of conservation of Indonesia endemic species.

Since 1992, the CBSG-Indonesia Program has been conducting several PHVA workshops for Sumatran tiger, Orangutan, Elephant, Rhino, White-winged Wood Duck, and Javan Gibbon. Recently, TSI, as one of the PHVA centers, with the Indonesian Zoological Association (PKBSI) and PHPA hosted some CBSG PHVA workshops such as Komodo monitor (4-7 December 1995), Marine Turtle (10-13 December 1995), Javan Hawk-Eagle (6-8 May 1996), and Babirusa/Anoa (22-26 July 1996). The most significant benefit of participating in these workshops for Indonesians was the development of contacts and then forming a network among specialists both nationally and internationally. This is especially true for people working within the captive and wild population management communities. Through the integration of ideas between *in-situ* and *ex-situ* experts, they can develop an excellent program, such as the Sumatran Rhino Sanctuary at Way Kambas National Park and the Save the Sumatran Tiger Project.

The CBSG-Indonesia has also led to the formation of a large network of local scientists with cooperation with regional and international conservation organizations which make them strong players in the global conservation arena. The CBSG-Indonesia has also established an excellent working relationship with CBSG and PHPA. Mutual trust and participation are the keys to the on-going cooperation between the captive and wild institutions. Moreover, the results of the PHVA provide successful implementation of strategy recommendations and prioritize long-term conservation and management and research of wild populations as well as provide species recommendations for the PKBSI captive population management program; for example, the Save the Sumatran Tiger Program, the Sumatran Rhino Sanctuary, and the Javan Gibbon Program. Consequently, next year we will plan for several major annual conservation workshops which are asked for by PHPA.

The weakness of the network, however, is the lack of funding and human resources who particularly deal with coordinating communication between the individuals concerned. Most of the PHVA workshop recommendations were only on paper. It needs to follow up the implementation status. Therefore, an assignment of an individual who particularly tackles and monitors the development of the network is very crucial. At present, Taman Safari Indonesia also acts as a liaison for this purpose. However, with the increased need for coordination of either national or regional networks, it is suggested that a staff person be allocated as a liaison at the TSI office for the CBSG networking system. This person would nurture and promote network development.

Thus, by looking at the CBSG-Indonesia Program, the PHVA results can be used as a guideline for conservation implementation by the Indonesian government, Directorate General of Forestry, PHPA for *In-Situ* Conservation Management Program and PKBSI for the *Ex-Situ* Conservation Management Program.

*This report was submitted by Jansen Manansang, Director of Taman Safari Indonesia and Coordinator for CBSG-Indonesia.*

### Working Group Report...

## Global Conservation Strategy

### Mission

"A Global Conservation Strategy (GCS) is a program of the Conservation Breeding Specialist Group (CBSG) for the management of a taxon at the international level linking, when appropriate, *ex situ* and *in situ* conservation activities for the recovery and/or long-term maintenance of captive and wild populations."

Program goals should include: 1) interregional program coordination; 2) linking *ex situ* and *in situ* programs; 3) *ex situ* support of *in situ* efforts; and identifying and involving all stakeholders.

### Criteria for Development of a Global Conservation Strategy

#### *Determination of Need*

The development of a Global Conservation Strategy is recommended for a specific taxon if the wild population assessment indicates a need for conservation action, if a captive population exists, and if there is a person or group of people willing to coordinate the program. Local managers and a broad spectrum of stakeholders should be involved in this assessment to determine the need for a Global Conservation Strategy.

#### *Current Assessment of Captive Populations*

To warrant a global program for the taxon, there should be



an existing captive population with the potential for global development and coordination. An assessment of the captive population should include information on the number of animals in each regional program, the number of facilities involved, the status of each program and, if appropriate, the status of these populations (e.g., number of founders, level of inbreeding). This may include information from ISIS, studbooks, and other sources. A significant issue is the verification of wild-caught status of founders and the accuracy of institutional records for animals with no permanent identifier such as a tattoo or transponder.

#### *Current Assessment of Wild Populations*

The first step in determining the need for a Global Conservation Strategy is an assessment of the status of the wild population to determine the need for conservation action. This may include information on the distribution, status, and threats of wild populations, and they may be based upon information available from CAMP workshops (often estimates), PHVAs, reports from IUCN Specialist Groups, scientific literature, and other sources.

#### **Administration of the Global Conservation Strategy**

The development and implementation of a Global Conservation Strategy should include all stakeholders, including local conservation authorities, zoological institutions, regional organizations, members of the academic community, non-governmental organizations, IUCN Specialist Groups, local residents, and others as appropriate.

#### *Organizing Committee and Coordinator*

A program coordinator and management committee should be identified, including representatives from regional programs, conservation agencies, IUCN Specialist Groups and other stakeholders. The responsibilities of these committee members, and the process by which the Global Conservation Strategy will be administered, need to be specified. The GCS will operate under the auspices of the IUCN CBSG.

#### *Communication*

A network of communication should be developed among all stakeholders who should be kept informed of the progress and activities of the Global Conservation Strategy.

#### *Priorities for Action*

The overall priorities for conservation action for both captive and wild populations should be identified, with concrete action steps and timelines.

#### *Public Relations*

This should be conducted in a manner acceptable to the stakeholders.

#### *Conservation and Research Programs*

Identify conservation and research programs both *ex situ* and *in situ* by networking with stakeholders.

#### *Project Funding*

This includes the identification of projects, approximate budgets, potential funding sources, and identification of who will be responsible for securing funds.

#### *Program Evaluation*

There needs to be an internal, self-evaluating, and regulating mechanism to assess the progress of the Global Conservation Strategy. A business plan should be developed specifying ways in which the GCS will achieve its mission or goals, including conflict resolutions. Evaluation of the GCS would then include examination of the progress toward completion of the business plan, as well as how this progress contributes toward the goals of the GCS.

#### **Management of Captive Populations**

A Global Conservation Strategy should include the involvement of regional zoo associations when they exist.

#### *Target Populations for Global and Regional Programs*

Target populations can be established using the CAPACITY software program given specific program goals. There should be more than one regional program for each taxon to protect the captive population from biological, political, economic, or other types of catastrophes. One of these programs should be in the range country for that taxon.

#### *Development of Regional Programs, Particularly in Range Countries*

The status of regional programs can be highly variable (from those resembling an coordinated zoo program to those with only one zoo and no regional zoo organization). Examination of range country programs can be critical, particularly in regard to verification of animal origins and accuracy of zoo records. Components in the evaluation of regional programs may include: 1) animal and facilities evaluation; 2) captive management staff training; 3) assessment of space (cage) needs; 4) studbook development and population analysis; and 5) formation of a management committee and masterplan.

#### *Development, Translation, and Distribution of Husbandry Manual*

The manual should identify basic items such as nutrition, housing, social groupings, veterinary concerns, and other topics for the captive management of a taxon which should be translated as needed.

#### *Establishment of a Genome Resource Bank (GRB) in Accordance with the CBSG Genome Resource Banking Guidelines*

#### *Identification of Critical Management, Husbandry, and Health Issues*

Critical issues affecting captive management in one or more regional programs need to be addressed which may include identifying the need for problem-oriented research.

*Strategy...**Integration of Regional Programs*

A strategy and accompanying mechanism need to be developed for the integration of regional programs into a global masterplan. This includes exchanges of individual animals and/or genetic material among populations.

**Support for Wild Populations**

A Global Conservation Strategy should include the involvement of government, wildlife conservation agencies, and appropriate stakeholders in the range countries of the taxon.

*Priorities for Action*

A set of priorities need to be identified based upon both conservation need and potential for implementation. Stakeholders need to be identified and included in this process.

*Establishing Distribution, Status, and Threats for Wild Populations*

This may include any of the following: 1) ecological studies to determine life history characteristics; 2) population assessment and monitoring; 3) population and habitat viability assessment (PHVA); and 4) poaching, protected status, and law enforcement.

*Training Programs*

Development of appropriate training programs.

*Community Education and Human Impact on Wild Populations*

Programs should focus on local stakeholders within the range country. Conservation education programs for the general public outside of the range country also are important.

*Interactive Management Strategies*

This may include recovery plans, translocations, reintroductions, and management of sub-populations as a metapopulation.

*Other Critical Issues*

These will vary by taxon and may include concerns such as disease, invasion of exotic species, international laws and treaties, and other issues.



## CBSG Science Network (Sci.Net) Working Group Report

Because CBSG bases its processes on sound science, establishing a Science Advisory Network was identified as an important need at the CBSG Future's Workshop, held at the White Oak Conservation Center (USA) in June, 1996. The mission of this network is to provide CBSG with the following: 1) identification of additional scientific specialists to participate in CBSG activities. This will result in a directory of specialists in each of the disciplines listed below; 2) follow-up on PHVA and CAMP recommendations and more and new participants for various CBSG activities and processes; and 3) identification of new tools and discipline issues for approaching resolutions of scientific questions.

To accomplish the mission, the working group eventually identified three objectives and strategies to achieve those objectives. The CBSG Future's Workshop participants agreed to identify a CBSG Sci.Net Coordinator. David Wildt agreed to do this task. Workshop participants also identified disciplines and Wildt, in collaboration with CBSG Chairman Ulie Seal and Program Officer Phil Miller, have identified the following multidisciplinary leaders for the first phase of the workshop: Population biology (including demographics and genetics; to be identified); Reproductive biology/genome resource banking (D. Wildt); Veterinary medicine (E. Miller); Nutrition (S. Crissey); Molecular genetics (W. Johnson/S. O'Brien); Behavior (J. Mellen); Captive Husbandry (J. Grisham/D. Morris); Modeling techniques development/methodology (to be identified); Organizational management theory/Human dimensions (F. Westley); Wildlife management (to be identified); and Education (to be identified).

It is recognized that there is a strong North American bias with respect to the Discipline Leaders. This was considered carefully for reasons that include ease of initial communication in designing how the network will function and be effective. Each of these leaders can easily work with the CBSG Chairman and the program office in North America. Each also is active in CBSG activities, has extensive experience in workshop processes, and understands the importance of the CBSG global mission. Finally, each is dedicated to immediately expanding the science network to include colleagues in regions throughout the world.

Discipline Leaders will extend invitations to scientists to join a network of specialists in their discipline willing and able to assist CBSG functions upon request of the Chairman, the Sci.Net Coordinator or the Disciplinary Leader. One product of this process will be the creation of a Directory of Specialists for each discipline.

There are several characteristics of the selection process vital to successful identification of a broad, science-based group

of specialists. Obviously, specialists will be selected on the basis of expertise, ability, and history of productivity. As with CBSG itself, diversity within each discipline, especially within and across regions and throughout the world, is vital to the process and should consider the following factors: 1) Geography - specialists will be identified on the basis of their geographic location and geographic areas of personal expertise (e.g., past experience in a region or country). One important consideration is the scientist's ability to communicate in languages native to the proposed CBSG need (e.g., workshop, scientific endeavor); 2) Subspecialty - within each discipline, individuals with a broad range of subspecialties will be identified; and 3) Species/taxa - scientists will be identified with special expertise in specific species and taxa.

Other characteristics of the selection process and maintenance of the directory are: 1) this extended network will be comprised of known entities (scientists who can be judged by their record of productivity and who can be counted on to follow through on a particular project) and new talent; 2) the selection of individuals will be an ongoing process that identifies new individuals and areas of expertise over time; and 3) maintenance in the directory will require continued interest and activity in the process. Individuals showing little interest or no longer making contributions to CBSG activities will be removed from the network.

To fulfill the mission of the CBSG Sci.Net, the working group identified the following objectives and strategies:

### **Objective I: Identify Diverse Scientific Resources for CBSG**

A directory will be created that can be accessed by the CBSG staff, the Discipline Leaders, and members of CBSG for the purpose of enhancing workshop processes, conducting workshops, and addressing cutting edge conservation issues.

#### *Strategies*

To achieve this objective, CBSG has identified scientific disciplines and identified discipline leaders, as listed above. Each Discipline Leader will (See Addendum I for the specific duties of the Discipline Leader.): 1) be responsible for identifying specialist in various regions where CBSG is active; 2) ensure that his/her discipline network is regionally diverse on the basis of geography, subspecialty, and/or species/taxa; 3) recruit a "point" person for each identified region. Preferably this point person is a local expert in the discipline. However, it may also be a well-connected local scientist who can provide the Disciplinary Leader with names of the appropriate specialists in that discipline; and 4) work with the point persons to capitalize on existing organizations or to develop regional working groups. Because there may be discipline groups and organizations already formed and in place, it is prudent to rely on those specialists or networks. Where scientific specialty groups are not organized, Disciplinary Leaders encourage formation of these regional groups. The above functions are summarized in Addendum II.

### **Objective II: Facilitate Communication among Disciplinary Leaders within Disciplinary Groups and Among Regions**

#### *Strategies*

The Discipline Leaders will communicate with specialist in their own field as well as with scientists throughout the CBSG Sci.Net. To achieve this objective: 1) it will be necessary for CBSG Sci.Net to develop effective methods of communication. Both inter- and intradisciplinary communication are essential. Among the methods are developing a listserv, communicating by electronic-mail, and updates in the CBSG Annual Report or CBSG Newsletter; 2) annual CBSG meetings should be considered as a venue for discipline group meetings to discuss activities, issues, and emerging conservation needs and tools. This also may be a venue for interdisciplinary meetings that may consist of all the Discipline Leaders, point persons, and others to foster intradisciplinary communication; and 3) the creation and distribution of informational materials advocating the importance of CBSG Sci.Net should be considered. Such information in the form of brochures or handouts would be used in a general recruitment strategy to attract and motivate prospective participating specialists.

### **Objective III: Development of New Tools While Addressing High Priority Conservation**

#### *Strategies*

Facilitate identification of issues and the need and use of new methodologies, tools, and strategies that will help address issues identified by CBSG, scientists within the network, or others. Promote identifying issues and discovering and testing new tools needed to address high priority conservation issues. Discipline Leaders will develop an interdisciplinary approach for keeping this an active topic and by discussions at the Annual CBSG meeting.

### **Addendum I: Duties of Discipline Leader**

It will be the responsibility of the Discipline Leader to accomplish the following and to dedicate a reasonable amount of time for these activities: 1) create a diverse scientific resource network for each discipline. The result will be a Directory of Specialists for each discipline that will consider an individual expert's geographic, sub-specialty, and species/taxa orientations. There should be continuous effort to seek new, qualified participants to add to the diversity of the group; 2) identify appropriate regions for each discipline. These regions may include geographic, sub-specialties and species/taxa specialists, again with an emphasis on achieving diversity; 3) recruit a point person for each region, thereby facilitating an objective identification of potential specialists as well as efficient communication and a quick response; 4) work with point persons to use existing organizations or to develop regional working groups; 5) facilitate communication within the discipline groups and with other disciplines by using electronic methods of communication as

*Sci.Net...*

well as proposing specialist group meetings; and 6) maintain and update a discipline database to serve as a Directory of Specialists for each discipline. The database will identify and code an individual expert's geographic, sub-specialty and species/taxa orientations. All directory databases will follow a standard format to be established by CBSG and will be updated annually. Feedback about the performance of scientific participants in CBSG functions will be obtained from CBSG for the purpose of evaluating the effectiveness of individual scientists. Disciplinary Leaders will need to respond to requests from CBSG by recommending specialists within the respective discipline for participation in a particular PHVA and/or CAMP.

#### **Addendum II: Considerations on a Development of a Sci.Net Database**

Considerable discussion during and after the sessions was generated about the type of database needed to satisfy the needs of the Science Network. A working subgroup of interested individuals consisting of Angela Gladston, Phil Miller, Richard Perron, Edward Plotka, Paul Scobie, Crispin Wilson, and David Wildt agreed that for the first year, the existing CBSG database, TeleMagic, would be used.

As an addendum discussion on the Sci.Net database, it was proposed that given its international scope, the database should be accessible to all via the Internet. The proposed Web site should incorporate existing international databases. In order to facilitate use, the database should be capable of being searched according to the following fields: scientific discipline, geographic experience, linguistic skills, and taxon expertise. Furthermore, the Web site would permit an individual to register or change their e-mail address. This facility would encourage international communication and the identification of appropriate individuals for specific projects.

*This report was submitted by Dr. David Wildt, Smithsonian Institution, and Dr. Phil Miller, CBSG.*

#### **Working Group Report...**

## **Integrating Local Human Populations into PHVA Processes**

It was determined that given the diverse socio-economic realities of human population in the range country of a particular endangered species, as well as the demographic pressures, that all conservation programs must be seen to have benefit by local populations if they are to succeed. To this end, the group focused

on the kind and degree of local involvement to be needed in a PHVA.

It was also determined that socio-economic realities of countries differ enormously; that it is impossible to gauge the sensitivities and complexities from the outside; and that host country representatives should be relied upon heavily for contacts and decisions about the specifics of who to include.

Lastly, it was felt strongly by all members of the group that CBSG's chief and foremost competence was as a catalyst to good science and conservation; that it was not and should not be responsible for implementation; and that there were limits to what CBSG could do in this regard. With regard to these three principles, the following criteria for actions and specific actions were discussed.

#### **Kind and Degree of Local Involvement**

The group was uniform in its enthusiasm for expanding the PHVA briefing book and data input to include social scientific expertise. Some of the critical areas included: traditional property rights expertise, local culture expertise, land-use data (PRA, RRA, Community Based Research Management), and demographic information.

It was felt that as much as possible, "the voice of the people" should be first introduced into the process through apolitical or neutral organizations such as university-based scientists. Group members felt that social scientists could and should be invited to the meeting and that networks already existed that could be tapped to bring in the right scholars. For example, in India the government already carries out social audits and there are community groups already involved in forest management. These programs could be accessed for expertise and resources. These scholars could work to align their own research agendas to take into account the species concerns and management plans. They could introduce an important perspective that could help ground the management plans and make them more achievable. They could also provide ongoing contact with the local communities. It was therefore important: 1) that CBSG develop clear communication about its goals in this regard, which could be sent to local organizers; and 2) that CBSG should include in their scientist data base names of social scientists (economists, anthropologists, demographers, development specialists) around the world that could potentially be tapped. These could be initially developed from existing data bases.

#### **Outside Involvement of Local Expertise**

The issue of outside involvement of local expertise was enormously complex and, therefore, needed to be handled with caution and sensitivity. There was lively discussion about different in-country complexities. In Indonesia, for example, there is a complex picture on the part of NGOs, INGOs, and diverse linguistic groups. Some NGOs work well with local government, others don't. It was generally felt that it was important to avoid overloading the PHVA with political agendas. The specifics of who and what kind of stakeholders to invite would have to be decided on a case-by-case basis. Again, it was

felt that it might be useful to prompt the host with categories of stakeholders and specify that their value would be in their ability to introduce socio-economic, legal, and cultural realities into the scientific deliberations, as well as themselves hearing about the status of a particular endangered species. The PHVA was not, on the other hand, a vehicle for political negotiations and should not be considered as a substitute for the lengthy, time consuming, and valuable processes of local participation in management implementation. Examples were drawn from Australia and South Africa, indicating how these sorts of negotiations, critical for the success of conservation programs, occurred over the space of a year, a very different time frame from the normal PHVA. However, it was felt that the CBSG should take a strong position that the local community be not only encouraged but also should be solicited to make recommendations on economic and ecologically sustainable development, and that there be some communication of the need for a liaison to continue monitoring and organizing local participation. The value of a post completion audit was also discussed.

Specifically, groups who might be considered as invitees were: 1) corporations (if their presence would not overwhelm other stakeholders, their participation was not wholly self-interested, if they were prepared to learn and contribute, and if inclusions of corporations did not taint the outcome/product in terms of other stakeholders' perceptions); 2) local populations/landowners (particularly if they were sophisticated, literate, and savvy enough to be aware that the PHVA was taking place); 3) NGOs/INGOs, particularly those known to work collaboratively with government or with other NGOs; 4) international aid organizations operating in the country; 5) politicians/media (only in exceptional cases); and 6) representatives of other programs (e.g., UNESCO heritage sites) which might be aligned with CBSG's objectives.

While in some cases these groups have historically been included in PHVAs, it was felt that it was important for the CBSG to communicate the desire to widen the circle and to be sensitive to local choice/tolerance for which types of stakeholders would be most productive to include; remembering that their function is to improve the scientific-decision making and to engage in a mutual process of "being heard." Ongoing openness and sensitivity to local concerns was stressed as key. The CBSG regional network personnel can be invaluable in this process.

### Ultimate CBSG Objective

The ultimate objective of the CBSG process should be scientific analysis and to act as a catalyst to stimulate development of sound scientific and reality-based management strategies.

In order to protect this core competence, the group felt it was important for CBSG to avoid being overloaded by other agendas. A number of different strategies for widening the circle were also suggested. One design, similar to that tried in Namibia, was to bring in local people/landowners before the PHVA for a one-day workshop so they had a chance to air their particular views. This workshop would produce a mini-report that could then be added

to the traditional PHVA. A second design, tried in Houston at the Houston Toad workshop, was to include the stakeholders in the workshop itself. This produced some tensions between lay and specialist groups, which might need to be accommodated. A third alternative might be a follow-up PHVA in which the output of the first PHVA would provide for discussions of a larger, more diverse group. This design will hopefully be tried in the near future in the Philippines.

### Immediate Actions

1. A number of sites have been offered for experimenting with an expanded PHVA, still to be confirmed. These included four potential species in India (elephants, tigers, bustards, tahr); the cape wild dog in South Africa; various species in Irian, Jaya, and the Molluccas as well as in Ujong Kulon in Indonesia.

2. In preparation for the field experiments, funding will be sought from USAID to convene a specialist working group including social scientists and the CBSG to further develop the kind of expertise and information that would be the most helpful and for the CBSG to spend time in a designated country before the PHVA working with local experts and discussing designs.

3. Initial work will be done to establish availability and access to demographic data bases and land use data bases and to ensure that these data are available for PHVAs in a timely way.

*This report was submitted by Dr. Frances Westley, McGill University.*

### Review...

## The International Zoo Yearbook, Volume 34

The International Zoo Yearbook (IZY) continues to be an indispensable source of information from around the world on zoo collections and their management. Much of the data are not available elsewhere and they are of value and interest to anyone concerned with the care, conservation, biology, and behavior of wild animals.

Volume 34 of IZY has a section of 19 articles related to aquariums. The articles range widely from reviews of the roles of aquariums and their future developments, including their conservation activities, to the specialized management requirements for sharks, pelagic jellyfish, broad-mantled squid, anemone fish, and sea slug nudibranchs.

Following this section are an additional 17 articles on recent developments in the zoo world, beginning with an important overview of the evolving and more holistic role of modern zoos and aquariums in relation to field conservation. Other articles include such diverse subjects as the management of giant tortoises; the breeding and development of Savi's pipistrelle bats, maned wolves, and white-lipped peccaries; hand-rearing a black

IZY...

rhinoceros; feeding behavior of giraffe calves; descriptions of the new exhibits in Melbourne, Atlanta, and Zurich; a status review of snow leopards in captivity; and a detailed report from Australia on a new approach to local, national, and international zoo-based education programs. The issue of inbreeding and its deleterious effects on fitness is discussed for captive populations of the Indian rhinoceros and the Nile lechwe.

The volume ends with a 98-page worldwide directory of zoos and aquariums and a listing of regional and national zoo associations; followed by 115 pages of vertebrate species bred in collections in 1993.

Volume 34 of IZY contains 549 pages of text with diagrams and photographs and costs US\$116 plus US\$9 for postage and packing. Please contact The Zoological Society of London, Regent's Park, London NW1 4RY, United Kingdom for more information on obtaining a copy.

*This review was submitted by Peter Olney, Zoological Society of London.*

## CBSG Chairman Awarded First Heini Hediger Award

In August 1996, Dr. Ulie Seal, Chairman of the CBSG, was awarded the first Heini Hediger Award for "outstanding and dedicated service to IUDZG and the zoo and aquarium profession." Following is the text of the award speech presented by Gunther Nogge, the president of IUDZG:

On behalf of IUDZG - The World Zoo Organization, I have the privilege to hand over the first Heini Hediger Award to Dr. Ulysses Seal for his outstanding contributions to the development of zoos.

All of us know that he is the Chairman of the Conservation Breeding Specialist Group (CBSG), one of more than 100 specialist groups of the Species Survival Commission (SSC) of IUCN - The World Conservation Union. What some may not know any more is that CBSG has emerged from the preceding IUCN/IUDZG Liaison Group. In 1979, Ulie Seal was appointed Chairman of this group by Sir Peter Scott, and since then he has served in this capacity, now in his seventh term.

A biochemist by training, Ulie spent the majority of his professional career as a scientist at the Veteran's Administration Medical Center of the University of Minneapolis, Minnesota, and he has published more than 260 peer-reviewed articles in scientific journals and about 70 book chapters and reviews. During this time in the course of his research work in endocrinology, he got in touch with and enthusiastic for tigers, zoos and species conservation.

In 1974, Ulie founded ISIS, the International Species Infor-

mation System, that provides a computerized database for the management of animal collections presently used by more than 450 cooperating zoological institutions worldwide.

In 1983, he initiated the first coordinated breeding program, the Tiger SSP, in North America, which soon became the model for coordinated breeding programs now in existence in practically all zoo-regions of the world.

Nowadays, young staff members at the zoos around the world work daily with ISIS, ARKS, SPARKS, SSPs and EEPs and take them for granted, and I am sure most of them will not know who was the initiator.

Under the leadership of Ulie Seal, CBSG flourished to become one of the largest and most active specialist groups of IUCN, a professional volunteer network with now more than 750 members in 70 countries. The CBSG understands itself as catalyst and coordinator for intensive management of threatened small populations both in the wild and in human care.

Who else has more experience and expertise in managing small populations than zoos? No wonder that members of CBSG in their majority are zoo people. To strengthen the links between the conservation world and the zoo world in general, and CBSG and IUDZG in particular, both organizations hold their annual general meetings in conjunction since 1985 in Calgary. To involve more people, regional CBSG meetings take place in cooperation with the various regional zoo organizations since 1992.

Over the past ten years, CBSG has developed a number of efficient tools to support and to improve small population management, such as Conservation Assessment Management Plans (CAMPs), Population and Habitat Viability Analyses (PHVAs), Global Captive Breeding Recommendations (GCARs), and Global Animal Survival Plans (GASPs).

All these activities have helped not only to build up and to maintain long-term viable zoo populations but also to raise the reputation of zoos as partners in conservation and to acknowledge their potential for species conservation. In 1986, a "Policy Statement on Captive Breeding" was formulated at a CBSG meeting in Cologne which was approved by IUCN in 1987, and the spirit of this policy statement later became part of IUCN's conservation strategy "Caring for the Earth." Ulie also was co-editor of the "World Zoo Conservation Strategy," launched in 1993, and he gave his worthwhile inputs during a Strategic Planning Workshop of the World Zoo Organization held in 1995, the result of which, "ZOO FUTURE 2005," now will be the guideline for the development of zoos for the next ten years.

Certainly conservation is only one of the facets in the bundle of tasks zoological gardens have to fulfill, but it has become and has to be the most important one. Ulie, having never been a zoo director, had the independence and distance to regard zoos from another aspect than zoo directors do, who have to struggle every day to keep their institutions running and hardly find the time to think beyond the next day. In the end, however, all zoos sit in the same boat and they have to share their minds and to join their efforts to meet the demands in a so rapidly changing world. In this situation, Ulie has always pushed us if we liked it or not,

stimulated discussions, shared his visions with us, and helped us to find the right way.

If we look back to the past 10-15 years, we can state that we have achieved a lot but, if we are serious, we have to admit, that much of it we owe the ongoing urging of Ulie Seal. To express our respect and gratitude, the Council of IUDZG - The World Zoo Organization decided to award the first Heini Hediger-Award to Ulie Seal. It is my pleasure to hand it out to him now. In doing so, I extend congratulations of the whole international zoo community, and of course we hope that you will share with us our challenging road into the future of zoos for many years to come.

### **Joint CBSG-IUDZG Draft Resolution...**

## **Conservation and Sustainable Use of Marine and Coastal Biological Diversity through the Education and Implementation of Safer Collection Methods of Live Fish and Invertebrates**

*Recognizing* that destruction of marine and coastal regions has reached an alarming scale, in part, due to destructive methods of collection.

*Recognizing* the aim of the World Zoo Conservation Strategy is to help conserve Earth's rapidly disappearing wildlife on a global scale.

*Recalling* the CBSG-IUDZG resolution on the implementation of the U.N. Convention on Biological Diversity, October 5, 1995 Dublin, Ireland.

*Considering* the deliberations in the Annual Meetings of CBSG and IUDZG, the World Zoo Organization, held in Denver, Colorado, USA, August 1996.

*We Resolve:*

- to urge the cooperative efforts of the Aquarium community, the pet trade, collectors, and wholesalers not to support or use fish and invertebrate collection methods that cause damage to the environment;

- to urge the Aquarium community to actively use their facilities and resources to inform, educate, and inspire the millions of people visiting their institutions each year and thus enlist much-needed help for conserving aquatic biodiversity for future generations;

- to actively encourage research in the reproductive and related sciences of these resources as a viable alternative to collecting; and

- to actively encourage the educational process of improved collection techniques.

Denver, Colorado, USA  
August 1996

## **CBSG Schedule - 1997-98**

Following is a partial schedule of events that the CBSG staff will be attending. This schedule is presented for those wishing to meet with the staff at opportune times and places. Personnel abbreviations are: (S) Ulysses Seal, (E) Susie Ellis, (B) Onnie Byers, (M) Phil Miller.

### **1997**

#### January

3 - 14 Entebe, Uganda: Chimpanzee PHVA (S,M)  
15 - 18 Thailand: Eastern Sarus Crane (S)

#### February

1 - 2 Atlanta, Georgia, USA: Giant Panda Briefing (S)  
8 - 15 Rome, Italy: Rome Zoo Masterplan (S)  
15 - 22 Jersey, Channel Islands, UK: Facilitators Training Course (S)

#### March

2 - 15 Cuba (S)  
14 - 16 Escondido, California, USA: Felid TAG (B)  
16 - 28 Auckland, New Zealand: ARAZPA and NZ Biodiversity Workshop (S)

#### April

7 - 12 Costa Rica: Mesoamerican Felid CAMP Review (B,E)  
8 - 13 Uruguay: Conservation Genetics Course (S)  
16 - 20 Puebla, Mexico: ALZPA (E)  
26 - 1 May Omaha, Nebraska, USA: Fringed Prairie Orchid PHVA (S,M,B)

#### May

4 - 10 Austin, Texas, USA: Edwards Aquifer Workshop (S,E,M,B)  
12 - 23 Belo Horizonte, Brazil: Muriqui, Golden Lion Tamarin (S)  
? Sweden: Conservation Genetics Course (S)  
? South Africa: Wild Dog PHVA (S,E)

#### June

20 - 25 Costa Rica: Primate Symposium and Regional Primate Masterplan (S)

#### August

14 - 21 Berlin, Germany: CBSG Annual Meeting and IUDZG (staff)

#### September

31 Aug - 8 Papua, New Guinea: Tree Kangaroo CAMP/ PHVA (B,M,S)  
14 - 21 Hanoi, Malaysia: World Pheasant PHVA (S)

# CBSG News



*Newsletter of the Conservation Breeding Specialist Group  
Species Survival Commission  
IUCN – World Conservation Union*



CBSG News  
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